SMITHSONIAN MISCELLANEOUS COLLECTIONS.

156

CATALOGUE

OF

MINERALS,

WITH THEIR FORMULAS, ETC.

PREPARED FOR THE SMITHSONIAN INSTITUTION.

BY

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CONTENTS.

Advertisement iii

Introduction v

Chemical symbols vii

Systems of crystallization ix

Analytical table xi

Catalogue of minerals 1

Check list of minerals 33

Alphabetical index 39

ADVERTISEMENT.

THE following Catalogue of Mineral Species has been prepared by Mr. Egleston, at the request of the Institution, for the purpose of facilitating the arranging and labelling of collections, and the conducting of exchanges, as well as of presenting in a compact form an outline of the science of mineralogy as it exists at the present day.

In labelling collections it is considered important to give the chemical composition as well as the names, and hence the formulæ have been added.

Some doubt was at first entertained as to the system of classification which ought to be adopted; but after due consideration it was concluded to make use of that followed by Professor Dana, in the last edition of his Manual of Mineralogy. Whatever difference of opinion may exist as to the best classification, the one here employed is that which will be most generally adopted in this country, on account of the almost exclusive use of Professor Dana's excellent Manual.

The Institution is under obligations to Prof. Dana, Prof. Brush, Dr. Genth, and other gentlemen, for their assistance in perfecting the work, and carrying it through the press.

Copies of the Catalogue, printed on one side only, to be cut apart for labels, can be furnished on application.

JOSEPH HENRY,
Secretary S. I.

SMITHSONIAN INSTITUTION,
June, 1863.

INTRODUCTION.

To render the present Catalogue of Minerals more than a mere enumeration of names, the formulæ expressing the chemical composition of the mineral and the system in which it crystallizes, as far as at present understood, have been given. The classification adopted is Dana's, as published in the fourth edition of his Mineralogy. Some species that have proved not to be well founded have been omitted, and many since published have been added. Of these latter species, some must be considered as having only a provisional place in the series, and it is probable that others will ultimately be dropped altogether. In making the additions and corrections, the Supplements to Dana's Mineralogy, which have appeared from time to time in *Silliman's Journal*, have always been consulted, and the most probable formulæ, as deduced by recent investigations, have been selected. In a few instances a change has been made in the place of a species where a more thorough examination has thrown light upon the true nature of the mineral or where it has been found that the system of crystallization had previously been incorrectly given. *Faujasite*, p. 19, was formerly considered as *dimetric*, it has lately been proved to be *monometric*, and it has therefore been placed among the monometric zeolites. The formula for *Euclase* is the one given by Rose; Damour's analysis gave water, and the formula $2\ddot{B}e\,\breve{S}i_4^3 + 3\ddot{A}l\,\breve{S}i_4^3 + \dot{H}$. Rammelsberg has recently discovered the existence of protoxides in *Staurotide*, and proposes as a general formula $(\dot{R}, \dot{R}^2) + \breve{S}i^n$. In the formula for *Opal*, water has not been written,

as it is found in very variable quantities, and is not considered as essential. For what is known of the species added to the list of organic compounds, see the 2d, 5th, 6th, and 7th Supplements to Dana's Mineralogy. For changes in the systems of crystallization, Des-Cloizeaux has generally been the authority.

A table of the symbols used, with illustrations of the meaning of the formulæ, are given on p. vii., and on p. ix. will be found a table relating to the systems of crystallization. In the first column are the simple forms from which all the others, of the same system, are derived; in the second the description of the axes of these simple forms, and in the others the nomenclature that has been adopted by the authors whose names stand at the head of the column. The axes of a crystal are imaginary lines drawn through its centre and about which it is symmetrical. It has been found most convenient to refer to the systems of crystallization by the numbers which have been placed on the left hand of the table.

An asterisk following the name of a mineral, as *Gold*,* p. 1, denotes that it has been found in the United States. A dagger, as *Danburite*,† p. 14, denotes that it has been found in the United States only. The other minerals have not, so far as is known, been found in this country.

T. EGLESTON.

New York, May, 1863.

CHEMICAL SYMBOLS.

Ag. (Argentum)	Silver.	Mg.	Magnesium.
Al.	Aluminium.	Mn.	Manganese.
Aq.	Water.	Mo.	Molybdenum.
As.	Arsenic.	N.	Nitrogen.
Au. (Aurum)	Gold.	Na. (Natrum)	Sodium.
B.	Boron.	Ni.	Nickel.
Ba.	Barium.	O.	Oxygen.
Be. (Beryllium)	Glucinum.	Os.	Osmium.
Bi.	Bismuth.	P.	Phosphorus.
Br.	Bromine.	Pb. (Plumbum)	Lead.
C.	Carbon.	Pd.	Palladium.
Ca.	Calcium.	Pt.	Platinum.
Cb.	Columbium.	Rd.	Rhodium.
Cd.	Cadmium.	Ru.	Ruthenium.
Ce.	Cerium.	S.	Sulphur.
Cl.	Chlorine.	Sb. (Stibium)	Antimony.
Co.	Cobalt.	Se.	Selenium.
Cr.	Chromium.	Si.	Silicium.
Cu. (Cuprum)	Copper.	Sn. (Stannum)	Tin.
D.	Didymium.	Sr.	Strontium.
F.	Fluorine.	Ta.	Tantalum.
Fe. (Ferrum)	Iron.	Tb.	Terbium.
H.	Hydrogen.	Te.	Tellurium.
Hg. (Hydrargyrum)	Mercury.	Th.	Thorium.
I.	Iodine.	U.	Uranium.
Ir.	Iridium.	V.	Vanadium.
K. (Kalium)	Potassium.	W. (Wolframium)	Tungsten.
La.	Lanthanum.	Y.	Yttrium.
Li.	Lithium.	Zn.	Zinc.
$\overline{\text{M}}$.	Mellic Acid.	Zr.	Zirconium.

Note.—R is an indefinite symbol, and may refer to any one or more of the symbols in the table. In the formulæ given in the Catalogue the dots over the symbols indicate atoms of oxygen—thus, Fe indicates one atom

of Iron combined with one of Oxygen. A dashed letter indicates a double atom of the substance—thus, $\ddot{\text{F}}\text{e}$ means two atoms of Iron combined with three of Oxygen. A general formula has sometimes been given when one or more of the elements are replaced by others in variable proportions, or for species which include several important varieties, as Melinophane, p. 12, Allanite and others, p. 14, Pyroxene, p. 11, Amphibole and Peridot, p. 12, &c. In these formulæ $\dot{\text{R}}$ represents all the bases composed of one atom of an element and one of Oxygen, and $\ddot{\text{R}}$ all those composed of two atoms of an element and three of Oxygen. Thus the general formula for the family of the Chlorites, p. 17, is $5\dot{\text{R}}^3\,\ddot{\text{S}}\text{i}_4^3 + 3\ddot{\text{R}}\,\ddot{\text{S}}\text{i}_4^3 + 12\dot{\text{H}}$, which means that the mineral contains five atoms of a compound made up of three atoms of proto-base combined with three-quarters of an atom of silicic acid, plus three atoms of a compound of one atom of sesqui-base combined with three-quarters of an atom of silicic acid, plus 12 atoms of water. In Chlorite and Pennine the proto-bases are Magnesia and Iron, but in Clinochlore Magnesia only; in Chlorite and Clinochlore the sesqui-base is Alumina only, while in Pennine it is Alumina and Iron. It will thus be seen that a large figure written as a co-efficient refers to the whole of the member to which it is prefixed, while a small figure written as an exponent refers only to the symbol to which it is attached. Thus $5\dot{\text{R}}^3\,\ddot{\text{S}}\text{i}_4^3$ means five atoms of $\dot{\text{R}}^3\,\ddot{\text{S}}\text{i}_4^3$, while $\dot{\text{R}}^3$ means simply three atoms of $\dot{\text{R}}$. When the symbols are written together the substances are in chemical combination—thus As S which is the formula for Realgar, p. 2, characterizes that mineral as a sulphuret of Arsenic. When one element is combined with several these are placed in brackets and each symbol is followed by a comma—thus Smaltine (Co, Fe, Ni) As^2, p. 4, is an Arseniuret of Cobalt, Iron, and Nickel. In this case the proportions of Cobalt, Iron, and Nickel are not stated. In the formula of Eisennickelkies $(\frac{1}{3}\text{Ni} + \frac{2}{3}\text{Fe})\,\text{S}$, p. 3, a sulphuret of Nickel and Iron, the proportions are stated. The general formula in this case would be RS; one-third of R is Nickel, and the other two-thirds Iron. When more than one element is combined with several others, both members are written in brackets; thus Glaucodot (Co, Fe) $(\text{S, As})^2$, p. 4, is a Bi-sulpho-arseniuret of Cobalt and Iron. In some instances, as Bismuth Silver, p. 1, no formula has been given, but simply an enumeration of the elements of which the mineral is composed; in this case each symbol is followed by a comma.

When the water of a mineral has not been determined, it has been written Aq. instead of $\dot{\text{H}}$.

SYSTEMS OF CRYSTALLIZATION.

No.	Simple Forms.	Axes.
1	Cube and octahedron.	3 axes rectangular and equal.
2	Right prism with square base.	3 axes rectangular, 2 equal.
3	Right prism with rectangular or rhombic base.	3 axes rectangular and unequal.
4	Right rhomboidal and oblique rhombic prisms.	3 axes unequal, 2 rectangular.
5	Oblique disymetric rhomboidal prism.	3 axes unequal, and unequally inclined.
6	Rhombohedron and hexagonal prism.	4 axes, 3 equal and equally inclined, 1 at right angles to the other three.

NAMES USED BY DIFFERENT AUTHORS.

No.	Naumann.	Mohs.	Weiss & Rose.	Phillips.	Delafosse.	Dana.
1	Tesseral.	Tessular.	Regular.	Cubic.	Cubic.	Monometric.
2	Tetragonal.	Pyramidal.	2 and 1 axial.	Pyramidal.	Tetragonal.	Dimetric.
3	Rhombic.	Orthotype.	1 and 1 axial.	Prismatic.	Orthorhombic.	Trimetric.
4	Monoclinohedric.	Hemiorthotype.	2 and 1 membered.	Oblique.	Clinorhombic.	Monoclinic.
5	Triclinohedric.	Anorthotype.	1 and 1 membered.	Anorthic.	Clinohedric.	Triclinic.
6	Hexagonal.	Rhombohedral.	3 and 1 axial.	Rhombohedral.	Hexagonal.	Hexagonal.

ANALYTICAL TABLE.

PAGE

A. NATIVE ELEMENTS 1

1. Hydrogen Group 1
2. Arsenic Group 1
3. Carbon Group 2

B. SULPHURETS, ARSENIURETS, ETC. 2

I. Binary Compounds 2

1. Compounds of Elements of the Arsenic Group with one another 2

2. Compounds of Elements of the Arsenic Group with those of the Hydrogen Group 3

1. Discrasite Division 3
2. Galena Division 3
3. Pyrites Division 4
4. Skutterudite Division 5

II. Double Binary Compounds 5

1. The Persulphuret a Sulphuret of an Element of the Hydrogen Group, as of Iron, Cobalt, or Nickel . 5

2. The Persulphuret a Sulphuret of Elements of the Arsenic Group 5

C. FLUORIDS, CHLORIDS, BROMIDS, IODIDS 6

1. Calomel Division 6
2. Rock Salt Division 7

D. OXYGEN COMPOUNDS 8

I. Binary Compounds 8

1. Oxides of the Elements of the Hydrogen Group . . 8

A. Anhydrous Oxides 8

1. Monometric 8
2. Hexagonal 8

PAGE

D. OXYGEN COMPOUNDS.—(Continued).

3. Dimetric 9
4. Trimetric 9
Appendix to Anhydrous Oxides 9
5. Combinations of Oxides and Chlorides or Sulphurets 9
B. Hydrous Oxides 9
Appendix to Hydrous Oxides 10
2. Oxides of Elements of the Arsenic Group . . . 10
1. Arsenic Division 10
2. Sulphur Division 10
3. Oxygen Compounds of Carbon, Boron and Silicon . . 11

II. OXYGEN DOUBLE BINARY COMPOUNDS 11

1. Silicates 11
A. Anhydrous Silicates 11
1. Edelforsite Section 11
2. Augite Section 11
3. Eulytine Section 12
4. Garnet Section 12
5. Mica Section 14
6. Feldspar Section 14
Appendix 15
7. Andalusite Section 15
B. Hydrous Silicates 16
I. Magnesian Hydrous Silicates 16
1. Talc Section 16
2. Serpentine Section 16
Appendix 17
3. Chlorite Section 17
II. Non-Magnesian Hydrous Silicates . . . 18
1. Pyrophyllite Section 18
2. Pectolite Section 18
3. Calamine Section 18
4. Zeolite Section 19
5. Datholite Section 20
Appendix to Hydrous Silicates 20
C. Unarranged Silicates containing Titanic Acid . . 20
Appendix 20
2. Titanates, Tungstates, Molybdates, Tantalates, Columbates, Chromates, Vanadates 21
3. Sulphates and Selenates 22
1. Anhydrous Sulphates 22

PAGE

D. OXYGEN COMPOUNDS.—(Continued.)

1. Trimetric 22
2. Rhombohedral 22
3. Monoclinic 22
Appendix to Anhydrous Sulphates . . . 23
2. Hydrous Sulphates 23

4. Borates 25

5. Phosphates, Arsenates, Antimonates, Nitrates . . 25
a. Anhydrous 25
1. Hexagonal 25
2. Dimetric 25
3. Monoclinic 25
4. Trimetric 26
Appendix 26
b. Hydrous 26
Sulphato-Phosphates 27
Appendix 28
c. Nitrates 28

6. Carbonates 28
1. Anhydrous Carbonates 28
2. Hydrous Carbonates 28
3. Carbonates with a Chloride or Fluoride . . 29

7. Oxalates 29

E. RESINS AND ORGANIC COMPOUNDS 30

CATALOGUE OF MINERALS.

No.	Name.	Formula.	System of crystallization.
	A. NATIVE ELEMENTS.		
	1. *Hydrogen Group.*		
1.	**Gold ***	Au	1
2.	**Platinum ***	Pt	1
3.	**Platiniridium ***	Ir, Pt	1
4.	**Palladium**	Pa	1
5.	**Quicksilver ***	Hg	1
6.	**Amalgam**	$Ag\,Hg^2$ and $Ag\,Hg^3$	1
7.	**Arquerite**	$Ag^6\,Hg$	1
8.	**Gold Amalgam ***	$(Au, Ag)^2\,Hg^5$	
9.	**Silver ***	Ag	1
10.	**Bismuth Silver**	Fe, Bi, Pb, Ag	1?
11.	**Copper ***	Cu	1
12.	**Lead**	Pb	1
13.	**Iron ***	Fe	1
14.	**Tin**	Sn	2
15.	**Zinc**	Zn	6
	2. *Arsenic Group.*		
16.	**Iridosmine ***	Ir, Os, Rd	6
17.	**Tellurium**	Te	6

No.	Name.	Formula.	System of crystallization.
18.	**Bismuth** *	Bi	6
19.	**Tetradymite** *	Bi, Te	6
20.	**Antimony**	Sb	6
21.	**Arsenic** *	As	6
22.	**Arsenical Antimony** *	Sb, As	6
23.	**Sulphur** *	S	3
24.	**Selenium**	Se	4
25.	**Selensulphur**	Se, S	
	3. *Carbon Group.*		
26.	**Diamond.** *	C	1
27.	**Mineral Coal**	C	
	27a. Anthracite *		
	27b. Bituminous Coal *		
	27c. Jet *		
	27d. Lignite *		
28.	**Graphite** *	C	6

B. SULPHURETS, ARSENIURETS, ETC.

I. BINARY COMPOUNDS.

1. Compounds of Elements of the Arsenic Group with one another.

29.	**Realgar**	As S	4
30.	**Orpiment** *	$As^2 S^3$	3
31.	**Dimorphine**	$As^4 S^3$	3
32.	**Bismuthine** *	$Bi^2 S^3$	3
33.	**Stibnite** *	$Sb^2 S^3$	3

No.	Name.	Formula.	System of crystallization.

2. Compounds of Elements of the Arsenic Group with those of the Hydrogen Group.

1. *Discrasite Division.*

34. Discrasite	$Ag^2 Sb$	3
35. Domeykite *	$Cu^3 As^2$	
36. Algodonite *	$Cu^6 As^1$	
37. Whitneyite *	$Cu^9 As^2$	

2. *Galena Division.*

38. Silver Glance *	Ag S	1
39. Erubescite *	(Fe, Cu) S	1
40. Galena *	Pb S	1
41. Steinmannite	Pb, S, Sb	1
42. Cuproplumbite ?	2Pb S + Cu S	1
43. Alisonite	3Cu S + Pb S	
44. Manganblende	Mn S	1
45. Syepoorite	Co S	
46. Eisennickelkies	($\frac{1}{3}$Ni + $\frac{2}{3}$Fe) S	1
47. Clausthalite	Pb Se	1
48. Naumannite	Ag Se	1
49. Berzelianite	Cu Se	
50. Eucairite	(Cu, Ag) Se	
51. Hessite *	Ag Te	1?
52. Altaite	Pb Te	1
53. Grünauite	(Bi, Ni, Co, Fe)^2 S^3	1
54. Blende *	Zn S	1
55. Copper Glance *	Cu S	3

No.	Name.	Formula.	System of crystallization.
56.	**Akanthite**	Ag S	3
57.	**Stromeyerite**	(Cu, Ag) S	3
58.	**Cinnabar** *	Hg S	6
59.	**Millerite** *	Ni S	6
60.	**Pyrrhotine** *	$Fe^7 S^8$	6
61.	**Greenockite**	Cd S	6
62.	**Wurtzite**	Zn S	6
63.	**Onofrite**	$Hg^6 Se^5$	
64.	**Copper Nickel** *	Ni As	6
65.	**Breithauptite** *	Ni Sb	6
66.	**Kaneite**	Mn As	
67.	**Schreibersite**	Fe, P, Ni	

3. *Pyrites Division.*

68.	**Pyrites** *	$Fe S^2$	1
69.	**Hauerite**	$Mn S^2$	1
70.	**Smaltine** *	$(Co, Fe, Ni) As^2$	1
71.	**Cobaltine**	$Co (S, As)^2$	1
72.	**Gersdorffite** *	$Ni (S, As)^2$	1
73.	**Ullmannite**	$Ni (S, As, Sb)^2$	1
74.	**Marcasite** *	$Fe S^2$	3
75.	**Rammelsbergite**	$Ni As^2$	3
76.	**Leucopyrite** *	$Fe As^2$	3
77.	**Mispickel** *	$Fe (As, S)^2$	3
78.	**Glaucodot**	$(Co, Fe) (S, As)^2$	3
79.	**Sylvanite** *	$(Ag, Au) Te^2$	3
80.	**Nagyagite**	$(Pb, Au) (Te, S)^2$	2

No.	Name.	Formula.	System of crystallization.
81.	**Covelline**	$\dot{C}u\,S^2$	6
82.	**Molybdenite** *	$Mo\,S^2$	6
83.	**Riolite**	$Ag\,Se^2$	6?
	4. Skutterudite Division.		
84.	**Skutterudite**	$Co\,As^3$	1

II. DOUBLE BINARY COMPOUNDS.

1. The Persulphuret a Sulphuret of an Element of the Hydrogen Group, as of Iron, Cobalt, or Nickel.

85.	**Linnæite** *	$Co\,S + Co^2\,S^3$	1
86.	**Cuban**	$Cu\,S + Fe^2\,S^3$	1
87.	**Chalcopyrite** *	$\dot{C}u\,S + Fe^2\,S^3$	2
88.	**Barnhardite** *	$2\dot{C}u\,S + Fe^2\,S^3$	2
89.	**Tin Pyrites**	$\dot{C}u\,S\,(Sn^2\,S^3, Fe^2\,S^3)$	2?
90.	**Sternbergite**	$Ag\,S + 2Fe^2\,S^3$?	3

2. The Persulphuret a Sulphuret of Elements of the Arsenic Group.

91.	**Wolfsbergite**	$\dot{C}u\,S + Sb^2\,S^3$	3
92.	**Tannenite**	$\dot{C}u\,S + Bi^2\,S^3$	3?
93.	**Berthierite**	$Fe\,S + Sb^2\,S^3$	
94.	**Zinkenite**	$Pb\,S + Sb^2\,S^3$	3
95.	**Miargyrite**	$Ag\,S + Sb^2\,S^3$	4
96.	**Plagionite**	$Pb\,S + \frac{3}{4}Sb^2\,S^3$	4
97.	**Jamesonite**	$Pb\,S + \frac{2}{3}Sb^2\,S^3$	3
98.	**Heteromorphite**	$Pb\,S + \frac{1}{2}Sb^2\,S^3$	
99.	**Brongniardite**	$(Pb, Ag)\,S + \frac{1}{2}Sb^2\,S^3$	1
100.	**Chiviatite**	$(\dot{C}u, Pb)\,S + \frac{1}{2}Bi^2\,S^3$	

No.	Name.	Formula.	System of crystallization.
101.	**Dufrenoysite**	$PbS + \frac{1}{2}As^2S^3$	1
102.	**Pyrargyrite**	$AgS + \frac{1}{3}Sb^2S^3$	6
103.	**Proustite** *	$AgS + \frac{1}{3}As^2S^3$	6
104.	**Freieslebenite** *	$(Ag, Pb)S + \frac{1}{3}Sb^2S^3$	4
105.	**Bournonite**	$(Cu, Pb)S + \frac{1}{3}Sb^2S^3$	3
106.	**Kenngottite**	Ag, Pb, S, Sb	4
107.	**Boulangerite**	$PbS + \frac{1}{3}Sb^2S^3$	
108.	**Aikinite**	$(Cu, Pb)S + \frac{1}{3}Bi^2S^3$	3
109.	**Wölchite**	Pb, Cu, As, Sb, S	3
110.	**Clayite?**	(Cu, Pb) (S, As, Sb)	1
111.	**Kobellite?**	$(Fe, Pb)S + \frac{2}{3}(Sb, Bi)^2S^3$	1?
112.	**Meneghinite**	$PbS + \frac{1}{4}SbS^3$	
113.	**Tetrahedrite** *	$(Cu, Fe, Zn, Ag)S + \frac{1}{4}(Sb, As)^2S^3$	1
114.	**Tennantite** *	$(Cu, Fe)S + \frac{1}{4}As^2S^3$	1
115.	**Geocronite** *	$PbS + \frac{1}{6}(Sb, As)^2S^3$	3
116.	**Polybasite**	$(Ag, Cu)S + \frac{1}{3}(Sb, As)^2S^3$	6
117.	**Stephanite**	$AgS + \frac{1}{6}Sb^2S^3$	3
118.	**Enargite** *	$(Cu, Fe, Zn)S + \frac{1}{3}(As, Sb)^2S^5$?	3
119.	**Xanthocone**	$(3AgS + As^2S^5) + 2(3AgS + As^2S^3)$	6
120.	**Fireblende**	Ag, S, Sb	4
121.	**Wittichite**	Cu, Bi, S	3

C. FLUORIDS, CHLORIDS, BROMIDS, IODIDS.

1. *Calomel Division.*

122.	**Calomel**	Hg^2Cl	2

No.	Name.	Formula.	System of crystallization.
	2. Rock Salt Division.		
123.	**Sylvine**	K Cl	1
124.	**Salt** *	Na Cl	1
125.	**Sal Ammoniac**	NH^4 Cl	1
126.	**Kerargyrite** *	Ag Cl	1
127.	**Embolite**	3Ag Cl + 2Ag Br	1
128.	**Bromyrite**	Ag Br	1
129.	**Iodo-bromid of Silver**	Ag, I, Br	
130.	**Fluor** *	Ca F	1
131.	**Yttrocerite** *	Ca F, YF, Ce F	
132.	**Iodyrite**	Ag I	6
133.	**Coccinite**	Hg I	2?
134.	**Fluocerite**	Ce, Y, HF	6
135.	**Fluocerine**	$Ce^2 F^3$ + 3 Ce H	1?
136.	**Cotunnite**	Pb Cl	3
137.	**Muriatic Acid**	H Cl	
138.	**Cryolite**	Na F + $\frac{1}{3}Al^2 F^6$	2
139.	**Chiolite**	Na F + $\frac{2}{3}Al^2 F^3$	2
140.	**Fluellite**	Al, F	3
141.	**Carnallite**	K Cl + Mg Cl + 12H	
142.	**Tachhydrite**	Ca Cl + 2Mg Cl + 12H	

No.	Name.	Formula.	System of crystallization.

D. OXYGEN COMPOUNDS.

I. BINARY COMPOUNDS.

1. Oxides of the Elements of the Hydrogen Group.

A. Anhydrous Oxides.

1. *Monometric.*

143.	**Periclase**	Ṁg	1
144.	**Red Copper** *	Ċu	1
145.	**Martite** *	F̈e	1
146.	**Iserine**	Ḟe (F̈e, T̈i)	1
147.	**Irite?**	(İr, Ös, Ḟe) (Ir, Os, Cr)^2 O^3?	1
148.	**Spinel** *	* Ṁg Ä̇l	
149.	**Magnetite** *	Ḟe F̈e	1
150.	**Magnoferrite**	† Ṁg^3 F̈e^4	1
151.	**Franklinite** *	(Ḟe, Żn)^3 (F̈e, M̈n)	1
152.	**Chromic Iron** *	(Ḟe, Ṁg) (Ä̇l, C̈r)	1
153.	**Pitchblende**	U Ü?	1
154.	**Melaconite** *	Ċu	1?
155.	**Plumbic Ochre** *	Ṗb	

2. *Hexagonal.*

156.	**Water** *	Ḣ	6
157.	**Zincite** *	Żn	6
158.	**Corundum** *	Ä̇l	6
159.	**Hematite** *	F̈e	6
160.	**Ilmenite** *	T̈i, F̈e,	6
161.	**Plattnerite**	Ṗb	6?
162.	**Tenorite**	Ċu	6?

* Ṁg may be replaced by Ċa, Ḟe, Ṁn, or Żn, alone or in combination.

† Rammelsberg gives the formula Ṁg^m F̈e^n, and gives 3 and 4 as the probable values of m and n.

No.	Name.	Formula.	System of crystallization.
		3. *Dimetric.*	
163.	**Braunite** *	$\dot{M}n\,\dot{M}n$	2
164.	**Hausmannite** *	$\dot{M}n\,\ddot{M}n$	2
165.	**Cassiterite** *	$\dot{S}n$	2
166.	**Rutile** *	$\dot{T}i$	2
167.	**Anatase** *	$\dot{T}i$	2
		4. *Trimetric.*	
168.	**Chalcotrichite** *	$\dot{C}u$	3
169.	**Chrysoberyl** *	$\ddot{B}e + \ddot{A}l^3$	3
170.	**Brookite** *	$\dot{T}i$	3
171.	**Pyrolusite** *	$\dot{M}n$	3
172.	**Polianite**	$\dot{M}n\,\ddot{M}n$	3
		Appendix to Anhydrous Oxides.	
173.	**Minium** *	$\dot{P}b^2\,\dot{P}b$	
174.	**Crednerite**	$\dot{C}u^3\,\ddot{M}n^2$	4
175.	**Heteroclin?**	$\ddot{M}n, \ddot{S}i$	4
176.	**Palladinite?** *	$\dot{P}a$	
		5. *Combinations of Oxides and Chlorides or Sulphurets.*	
177.	**Voltzite**	$4Zn\,S + \dot{Z}n$	
178.	**Matlockite**	$Pb\,Cl + \dot{P}b$	2
179.	**Mendipite**	$Pb\,Cl + 2\dot{P}b$	3
180.	**Percylite?**	$(Pb\,Cl + \dot{P}b) + (Cu\,Cl + \dot{C}u) + Aq$	1
181.	**Karelinite?**	$\ddot{B}i + Bi\,S$	
		B. Hydrous Oxides.	
182.	**Diaspore** *	$\ddot{A}l\,\ddot{H}$	3
183.	**Göthite** *	$\ddot{F}e\,\ddot{H}$	3

No.	Name.	Formula.	System of crystallization.
184.	**Manganite**	$\dot{M}n\,\dot{H}$	3
185.	**Limonite** *	$\dot{F}e^2\,\dot{H}^3$	
186.	**Brucite** *	$\dot{M}g\,\dot{H}$	6
187.	**Gibbsite** *	$\ddot{A}l\,\dot{H}^3$	6
	Appendix to Hydrous Oxides.		
188.	**Völknerite** *	$\dot{M}g^6\,\ddot{A}l + 16\dot{H}$	6
189.	**Hydrotalcite**	$\dot{M}g^3\,\ddot{A}l + 12\dot{H}$	
190.	**Psilomelane** *	$(\dot{M}n, \dot{B}a)\,\dot{M}n^2 + \dot{H}$	
191.	**Newkirkite**	$\dot{M}n, \dot{F}e, \dot{H}$	
192.	**Wad** *	$*\,\dot{R}\,\dot{M}n + \dot{H}$	
193.	**Atacamite**	$Cu\,Cl + 3\dot{C}u\,\dot{H}$	3

2. Oxides of Elements of the Arsenic Group.

1. *Arsenic Division.*

194.	**Arsenolite** *	$\ddot{A}s$	1
195.	**Senarmontite**	$\ddot{S}b$	1
196.	**Valentinite**	$\ddot{S}b$	3
197.	**Bismuth Ochre** *	$\ddot{B}i$	
198.	**Kermesite**	$2Sb\,S^3 + \ddot{S}b$	4
199.	**Retzbanyite**	$(3Bi\,S + 2Cu\,S, Pb\,S) + 2\dot{P}b\,\ddot{S}$	
200.	**Cervantite**	$\ddot{S}b + \ddot{S}b$	
201.	**Volgerite**	$\ddot{S}b + 5\dot{H}$	
202.	**Ammiolite**	$\dot{H}g, \ddot{S}b, \dot{F}e, \dot{H}$	

2. *Sulphur Division.*

203.	**Sulphurous Acid** *	$\ddot{S}$	
204.	**Telluric Ochre**	$\ddot{T}e$?	

* $\dot{R} = \dot{K}, \dot{B}a, \dot{C}o, \dot{M}n.$

No.	Name.	Formula.	System of crystallization.
205.	**Sulphuric Acid** *	S̈ Ḣ	
206.	**Wolframine** *	Ẅ	1
207.	**Molybdine** *	M̈o	3

3. Oxygen Compounds of Carbon, Boron and Silicon.

208.	**Carbonic Acid** *	C̈	
209.	**Sassolin**	B̈ Ḣ³	5
210.	**Quartz** *	S̈i	6
	210ᵃ. Jasper *		
	210ᵇ. Agate *		
	210ᶜ. Chalcedony *		
211.	**Opal** *	S̈i	
	211ᵃ. Precious opal		
	211ᵇ. Semi-opal *		
	211ᶜ. Hyalite *		
	211ᵈ. Geyserite		

II. OXYGEN DOUBLE BINARY COMPOUNDS.

1. Silicates.

A. Anhydrous Silicates.

1. *Edelforsite Section.*

212.	**Edelforsite**	Ċa S̈i	

2. *Augite Section.*

213.	**Wollastonite** *	Ċa³ S̈i²	4
214.	**Pyroxene**	Ṙ³ S̈i²	4
	214ᵃ. Diopside *	(Ċa, Ṁg)³ S̈i²	
	214ᵇ. Hedenbergite *	(Ċa, Ḟe)³ S̈i²	
	214ᶜ. Augite *	(Ċa, Ṁg, Ḟe)³ S̈i²	
215.	**Pelicanite**	Ä̇l S̈i³ + 2Ḣ	

No.	Name.	Formula.	System of crystallization.
216.	**Spodumene** *	$(\dot{L}i, \dot{N}a)^3 \ddot{S}i^2 + 4\ddot{A}l\,\ddot{S}i^2$	4
217.	**Prehnitoid**	$(\dot{N}a, \dot{C}a)^3 \ddot{S}i^2 + 2\ddot{A}l\,\ddot{S}i^2$	
218.	**Amphibole**	$\dot{R}^4 \ddot{S}i^3$	4
	218a. Tremolite *	$(\dot{C}a + 3\dot{M}g)\,\ddot{S}i^3$	
	218b. Actinolite *	$(\dot{C}a + 3(\dot{M}g, \dot{F}e))\,\ddot{S}i^3$	
	218c. Hornblende *	$(\dot{F}e + 3\dot{M}g)\,\ddot{S}i^3$	
219.	**Acmite**	$\dot{N}a\,\ddot{S}i + \dot{F}e\,\ddot{S}i^2$	4
220.	**Strakonitzite?**	$\dot{C}a, \dot{M}g, \dot{F}e, \ddot{A}l, \ddot{S}i, \dot{H}$	4
221.	**Enstatite**	$\dot{M}g^3 \ddot{S}i^2$	3
222.	**Anthophyllite** *	$(\dot{F}e + 3\dot{M}g)\,\ddot{S}i^3$	3
223.	**Hypersthene** *	$(\dot{F}e, \dot{M}n)^3 \ddot{S}i^2$	3
224.	**Wichtyne**	$(\dot{N}a, \dot{C}a, \dot{M}g, \dot{F}e)^3 \ddot{S}i + \ddot{A}l\,\ddot{S}i^2$	
225.	**Babingtonite** *	$(\dot{C}a, \dot{F}e)^6 \ddot{S}i^5$	5
226.	**Rhodonite** *	$\dot{M}n^3 \ddot{S}i^2$	5
227.	**Beryl** *	$(\frac{1}{2}\ddot{B}e + \frac{1}{2}\ddot{A}l)\,\ddot{S}i^2$	6
228.	**Eudialyte**	$2(\dot{C}a, \dot{N}a, \dot{F}e)^3 \ddot{S}i^2 + \ddot{Z}r\,\ddot{S}i^2$	6
	3. *Eulytine Section.*		
229.	**Eulytine**	$\ddot{B}i^2 \ddot{S}i^3$	1
230.	**Leucophane**	$\dot{C}a^3 \ddot{S}i^2 + \ddot{B}e\,\ddot{S}i + Na\,F$	3
231.	**Melinophane**	* $\dot{R}^3 \ddot{S}i^2 + \ddot{R}\,\ddot{S}i + Na\,F$	6?
	4. *Garnet Section.*		
232.	**Peridot**	$\dot{R}^3 \ddot{S}i$	3
	232a. Forsterite *	$\dot{M}g^3 \ddot{S}i$	
	232b. Chrysolite *	$(\dot{M}g, \dot{F}e)^3 \ddot{S}i$	
	232c. Fayalite *	$\dot{F}e^3 \ddot{S}i$	

* $\dot{R} =$ Ca. Na. $\ddot{R} =$ Al. Be

No.	Name.	Formula.	System of crystallization.
233.	**Tephroite** *	$\dot{M}n^3\,\ddot{S}i$	2?
234.	**Knebelite**	$(\dot{F}e, \dot{M}n)^3\,\ddot{S}i$	
235.	**Chondrodite** *	* $\dot{M}g^4\,\ddot{S}i$	3
336.	**Willemite** *	$\dot{Z}n^3\,\ddot{S}i$	6
237.	**Phenacite** *	$\ddot{B}e\,\ddot{S}i$	6
238.	**Garnet**	$\dot{R}^3\,\ddot{S}i + \ddot{R}\,\ddot{S}i$	1
	238a. Pyrope *	$(\dot{C}a, \dot{M}g)^3\,\ddot{S}i + (\ddot{A}l, \ddot{F}e)\,\ddot{S}i$	
	238b. Grossular *	$\dot{C}a^3\,\ddot{S}i + \ddot{A}l\,\ddot{S}i$	
	238c. Almandine *	$\dot{F}e^3\,\ddot{S}i + \ddot{A}l\,\ddot{S}i$	
	238d. Spessartine *	$\dot{M}n^3\,\ddot{S}i + \ddot{A}l\,\ddot{S}i$	
	238e. Melanite *	$\dot{C}a^3\,\ddot{S}i + \ddot{F}e\,\ddot{S}i$	
	238f. Ouvarovite	$\dot{C}a^3\,\ddot{S}i + (\ddot{C}r\,\ddot{A}l)\,\ddot{S}i$	
239.	**Helvin**	$(\dot{M}n, \dot{F}e)^3\,\ddot{S}i^2 + \ddot{B}e\,\ddot{S}i + Mn\,S$	1
240.	**Zircon** *	$\ddot{Z}r\,\ddot{S}i$	2
241.	**Auerbachite**	$\ddot{Z}r\frac{1}{2}\,\ddot{S}i\frac{3}{4}$	2
242.	**Alvite** ?	$\ddot{T}h?, \dot{Y}, \ddot{Z}r, \ddot{F}e, \ddot{A}l, \ddot{B}e, \ddot{S}i, \dot{H}$	2
243.	**Tachyaphaltite**	$\ddot{T}h?, \ddot{A}l, \ddot{F}e, \ddot{Z}r, \ddot{S}i, \dot{H}$	2
244.	**Idocrase** *	$(\dot{C}a, \dot{M}g, \dot{F}e)^3\,\ddot{S}i + \ddot{A}l\,\ddot{S}i$	2
245.	**Sarcolite**	$(\dot{C}a, \dot{N}a)^3\,\ddot{S}i + \ddot{A}l\,\ddot{S}i$	2
246.	**Meionite**	$\dot{C}a^3\,\ddot{S}i + 2\ddot{A}l\,\ddot{S}i$	2
247.	**Scapolite** *	$\dot{C}a^3\,\ddot{S}i^2 + 2\ddot{A}l\,\ddot{S}i$	2
248.	**Mellilite**	$2(\dot{C}a, \dot{N}a, \dot{M}g)^3\,\ddot{S}i + (\ddot{A}l, \ddot{F}e)\,\ddot{S}i$	2
249.	**Dipyre**	$4(\dot{C}a, \dot{N}a)\,\ddot{S}i + 3\ddot{A}l\,\ddot{S}i$	2

* Part of the oxygen is replaced by fluorine in varying proportions.

No.	Name.	Formula.	System of crystallization.
250.	**Epidote**	$\dot{R}^3\ddot{S}i + 2\ddot{R}\ddot{S}i$	5
	250a. Pistacite *	$(\dot{C}a, \dot{F}e)^3\ddot{S}i + 2\ddot{A}l\ddot{S}i$	
	250b. Zoisite *	$\dot{C}a^3\ddot{S}i + 2\ddot{A}l\ddot{S}i$	
	250c. Piedmontite	$\dot{C}a^3\ddot{S}i + 2(\ddot{A}l, \ddot{M}n)\ddot{S}i$	
251.	**Allanite** *	* $\dot{R}^3\ddot{S}i + \ddot{R}\ddot{S}i$	4
252.	**Partschin**	$(\dot{F}e, \dot{M}n)^3\ddot{S}i + \ddot{A}l\ddot{S}i$	4
253.	**Zoisite** *Brooke*	$\dot{C}a^3\ddot{S}i + 2\ddot{A}l\ddot{S}i$	4
254.	**Gadolinite**	† $(\dot{R}^3, \ddot{R})\ddot{S}i_4^3$	4
255.	**Danburite** †	$\dot{C}a^3\ddot{S}i + 3\ddot{B}\ddot{S}i$	5
256.	**Axinite** *	‡ $(\dot{R}^3, \ddot{R}, \ddot{B})\ddot{S}i$	5
257.	**Iolite** *	$(\dot{M}g, \dot{F}e)^3\ddot{S}i^2 + 3\ddot{A}l\ddot{S}i$	3
		5. *Mica Section.*	
258.	**Muscovite** *	§ $(\frac{1}{19}\dot{K}^3 + \frac{12}{19}\ddot{R})\ddot{S}i_4^5$	3
259.	**Phlogopite** *	$3(\dot{K}, \dot{M}g)^3\ddot{S}i + 2\ddot{A}l\ddot{S}i$	3
260.	**Biotite** *	$(\dot{K}, \dot{M}g)^3\ddot{S}i + (\ddot{A}l, \ddot{F}e)\ddot{S}i$	3?
261.	**Astrophyllite**	$\dot{K}, \dot{N}a, \dot{C}a, \dot{F}e, \dot{M}n, \ddot{T}i, \ddot{A}l, \ddot{Z}r, \ddot{F}e, \ddot{S}i$	
262.	**Lepidomelane**	$(\dot{K}, \dot{F}e)^3\ddot{S}i + 3(\ddot{A}l, \ddot{F}e)\ddot{S}i$	3?
263.	**Lepidolite** *	$(\dot{K}, \dot{L}i)\ddot{S}i + (\ddot{A}l, \ddot{F}e)\ddot{S}i$	3
		6. *Feldspar Section.*	
264.	**Sodalite** *	$\dot{N}a^3\ddot{S}i + 3\ddot{A}l\ddot{S}i + Na\,Cl$	1
265.	**Lapis Lazuli**	$\dot{N}a, \dot{C}a, \ddot{A}l, \ddot{F}e, \ddot{S}i, \ddot{S}$	1
266.	**Häuyne**	$\dot{N}a^3\ddot{S}i + 3\ddot{A}l\ddot{S}i + 2\dot{C}a\ddot{S}$	1
267.	**Nosean**	$\dot{N}a^3\ddot{S}i + 3\ddot{A}l\ddot{S}i + \dot{N}a\ddot{S}$	1
268.	**Skolopsite**	‖ $\dot{R}^3\ddot{S}i^2 + \ddot{A}l\ddot{S}i + \frac{1}{3}\dot{N}a\ddot{S}$	

* $\dot{R}$ = Ca. Ce. La. Di. Fe. Mg. $\ddot{R}$ = Al Fe
† $\dot{R}$ = Ca. Ce. Fe. Y. $\ddot{R}$ = Be.
‡ $\dot{R}$ = Ca. $\ddot{R}$ = Al. Fe. Mn.
§ $\ddot{R}$ = Al. Fe.
‖ $\dot{R}$ = Na. Ka. Ca. Mg. Mn.

No.	Name.	Formula.	System of crystallization.
269.	**Leucite**	$\dot{K}^3\ddot{S}i^2 + 3\ddot{A}l\ddot{S}i^2$	1
270.	**Nepheline** *	$(\dot{N}a, \dot{K})^2\ddot{S}i + 2\ddot{A}l\ddot{S}i$	6
271.	**Cancrinite** *	$\dot{N}a^2\ddot{S}i + 2\ddot{A}l\ddot{S}i + (\dot{N}a, \dot{C}a)\ddot{C} + \dot{H}$	6
272.	**Anorthite**	$(\dot{N}a, \dot{K}, \dot{C}a, \dot{M}g)^3\ddot{S}i + 3\ddot{A}l\ddot{S}i$	5
273.	**Andesine** *	$(\dot{C}a, \dot{N}a)^3\ddot{S}i^2 + 3\ddot{A}l\ddot{S}i^2$	5
274.	**Barsowite**	$\dot{C}a^3\ddot{S}i^2 + 3\ddot{A}l\ddot{S}i$	5?
275.	**Bytownite?**	$\dot{C}a^3\ddot{S}i^2 + 3\ddot{A}l\ddot{S}i$	
276.	**Labradorite** *	$(\dot{C}a, \dot{N}a)\ddot{S}i + \ddot{A}l\ddot{S}i$	5
277.	**Oligoclase** *	$(\dot{C}a, \dot{N}a)\ddot{S}i + \ddot{A}l\ddot{S}i^2$	5
278.	**Albite** *	$\dot{N}a\ddot{S}i + \ddot{A}l\ddot{S}i^3$	5
279.	**Orthoclase** *	$\dot{K}\ddot{S}i + \ddot{A}l\ddot{S}i^3$	4
280.	**Petalite** *	$(\dot{L}i, \dot{N}a)^3\ddot{S}i^4 + 4\ddot{A}l\ddot{S}i^4$	5?
		Appendix.	
281.	**Cyclopite**	$(\dot{C}a, \dot{N}a)^3\ddot{S}i + 2(\ddot{A}l, \ddot{F}e)\ddot{S}i$	5
282.	**Weissigite?**	$\dot{N}a, \dot{K}, \dot{L}i, \ddot{A}l, \ddot{S}i$	4
283.	**Pollux**	$\dot{K}, \dot{N}a, \ddot{A}l, \ddot{F}e, \ddot{S}i$	
284.	**Isopyre**	$\dot{C}a\ddot{S}i + (\ddot{A}l, \ddot{F}e)\ddot{S}i$	
285.	**Silicate of Yttria?**	$\dot{Y}, \ddot{S}i$	
286.	**Polychroilite**	$\dot{M}g, \ddot{A}l, \ddot{F}e, \ddot{S}i, \dot{H}$	6?
		7. *Andalusite Section.*	
287.	**Gehlenite**	$3(\dot{M}g, \dot{C}a)^3\ddot{S}i + (\ddot{F}e, \ddot{A}l)^3\ddot{S}i$	2
288.	**Andalusite** *	$*\ \ddot{A}l\ddot{S}i^{\frac{3}{4}}$	3
289.	**Topaz** *	$*\ \ddot{A}l\ddot{S}i^{\frac{3}{4}}$	3
290.	**Staurotide** *	$\dagger\ (\ddot{A}l, \ddot{F}e)\ddot{S}i^{\frac{3}{4}}$	3
291.	**Carolathine**	$\ddot{A}l\ddot{S}i^{\frac{3}{4}}$	

* And $\ddot{A}l\ddot{S}i^{\frac{3}{4}}$. In Topaz part of the oxygen is replaced by fluorine.
† And $\ddot{A}l\ddot{S}i^{\frac{1}{2}}$. Rammelsberg writes the formula $(\dot{R}, \ddot{R}^2) + \ddot{S}i^n$.

No.	Name.	Formula.	System of crystallization.
292.	**Lievrite** *	$3(\dot{F}e, \dot{C}a)^3 \ddot{S}i + \dot{F}e^2 \ddot{S}i$	3
293.	**Kyanite** *	$\ddot{A}l \ddot{S}i^{\frac{2}{3}}$	5
294.	**Sillimanite** *	* $\ddot{A}l \ddot{S}i^{\frac{2}{3}}$	3
295.	**Sapphirine**	$\dot{M}g, \dot{F}e, \ddot{A}l, \ddot{S}i$	3?
296.	**Euclase**	$(\frac{1}{2}\ddot{B}e + \frac{1}{2}\ddot{A}l) \ddot{S}i^{\frac{3}{4}}$	4
297.	**Sphene** *	$(\dot{C}a, \dot{T}i) \ddot{S}i^{\frac{3}{5}}$	4
298.	**Keilhauite**	$(\dot{Y}, (\dot{C}a, \dot{T}i), \ddot{A}l, \dot{F}e, \dot{M}n, \dot{E}r) \ddot{S}i^{\frac{3}{5}}$	4
299.	**Tourmaline** *	† $(\dot{R}^3, \ddot{R}, \ddot{B}) Si^{\frac{3}{4}}$	6

B. Hydrous Silicates.

I. Magnesian Hydrous Silicates.

1. *Talc Section.*

300.	**Talc** *	$\dot{M}g^6 \ddot{S}i^5 + 2\dot{H}$	3?
301.	**Meerschaum**	$\dot{M}g \ddot{S}i + \dot{H}$?	
302.	**Neolite**	$(\dot{F}e, \dot{M}g) \ddot{S}i + \frac{1}{3}\dot{H}$?	
303.	**Spadaite**	$\dot{M}g^5 \ddot{S}i^4 + 4\dot{H}$	
304.	**Chlorophæite**	$\dot{F}e \ddot{S}i + 6\dot{H}$?	
305.	**Crocidolite**	$(\dot{N}a, \dot{M}g, \dot{F}e)^6 \ddot{S}i^5 + 2\dot{H}$	4?

2. *Serpentine Section.*

306.	**Picrophyll**	$(\dot{M}g, \dot{F}e)^3 \ddot{S}i^2 + 2\dot{H}$	6?
307.	**Kerolite** *	$\dot{M}g^3 \ddot{S}i^2 + 4\frac{1}{2}\dot{H}$	
308.	**Monradite**	$(\dot{M}g, \dot{F}e)^3 \ddot{S}i^2 + \frac{3}{4}\dot{H}$	
309.	**Aphrodite**	$\dot{M}g^3 \ddot{S}i^2 + 2\frac{1}{4}\dot{H}$	
310.	**Picrosmine**	$\dot{M}g^3 \ddot{S}i^2 + 1\frac{1}{2}\dot{H}$	3
311.	**Saponite** *	$2\dot{M}g^3 \ddot{S}i^2 + \ddot{A}l \ddot{S}i + 10\dot{H}$	

* And $\ddot{A}l \ddot{S}i^{\frac{3}{4}}$.

† $\dot{R} = \dot{F}e.\ \dot{M}g.\ \dot{C}a.\ \dot{N}a.\quad \ddot{R} = \ddot{A}l.\ \ddot{F}e.$

No.	Name.	Formula.	System of crystallization.
312.	**Serpentine** *	$\dot{M}g^3\ddot{S}i^4 + 6\dot{H}$	3 ?
313.	**Deweylite** *	$\dot{M}g^2\ddot{S}i + 3\dot{H}$	
314.	**Hydrophite** *	$(\dot{M}g, \dot{F}e)^2\ddot{S}i + 3\dot{H}$?	
315.	**Nickel Gymnite** *	$(\dot{N}i, \dot{M}g)^2\ddot{S}i + 3\dot{H}$	
		Appendix.	
316.	**Ottrelite** *	$(\dot{F}e, \dot{M}n)^3\ddot{S}i^2 + 2\ddot{A}l\ddot{S}i + 3\dot{H}$	4?
317.	**Groppite**	$(\dot{K}, \dot{C}a, \dot{M}g)^3\ddot{S}i^2 + 2\ddot{A}l\ddot{S}i + 3\dot{H}$	
318.	**Stilpnomelane**	$\ddot{F}e^3\ddot{S}i^2 + \ddot{A}l\ddot{S}i^2 + 7\dot{H}$	
319.	**Chalcodite** †	$2(\dot{F}e, \dot{M}g)\ddot{S}i + (\ddot{A}l, \ddot{F}e)\ddot{S}i + 3\dot{H}$	
320.	**Eukamptite**	$(\dot{M}g, \dot{F}e)^3\ddot{S}i + \ddot{A}l\ddot{S}i + \dot{H}$	
321.	**Melanhydrite**	$(\dot{M}g,\dot{F}e,\dot{M}n)^3\ddot{S}i^2 + 2(\ddot{A}l,\ddot{F}e)\ddot{S}i + 12\dot{H}$	
		3. *Chlorite Section.*	
322.	**Hisingerite**	$\dot{F}e^3\ddot{S}i + 2\ddot{F}e\ddot{S}i + 6\dot{H}$	
323.	**Thuringite** *	$2\dot{F}e^3\ddot{S}i + (\ddot{A}l, \ddot{F}e)^3\ddot{S}i + 6\dot{H}$	
324.	**Euphyllite** †	$(\dot{N}a, \dot{K}, \dot{C}a)^3\ddot{S}i + 8\ddot{A}l\ddot{S}i + 6\dot{H}$	
325.	**Pyrosclerite** *	$2\dot{M}g^3\ddot{S}i + \ddot{A}l\ddot{S}i + 6\dot{H}$	6 ?
326.	**Pseudophite?**	$4(\dot{M}g, \dot{F}e)^3\ddot{S}i + \ddot{A}l^2\ddot{S}i + 9\dot{H}$	
327.	**Thermophyllite?**	$\dot{M}g^3\ddot{S}i^{\frac{2}{3}} + (\ddot{A}l, \ddot{F}e)\ddot{S}i^{\frac{2}{3}} + 2\dot{H}$	
328.	**Chlorite**	$5\ddot{R}^3\ddot{S}i^{\frac{3}{4}} + 3\ddot{R}\ddot{S}i^{\frac{3}{4}} + 12\dot{H}$	6
	328a. Chlorite *	$5(\dot{M}g, \dot{F}e)^3\ddot{S}i^{\frac{3}{4}} + 3\ddot{A}l\ddot{S}i^{\frac{3}{4}} + 12\dot{H}$	
	328b. Pennine	$5(\dot{M}g, \dot{F}e)^3\ddot{S}i^{\frac{3}{4}} + 3(\ddot{A}l, \ddot{F}e)\ddot{S}i^{\frac{3}{4}} + 12\dot{H}$	
	328c. Clinochlore *	$5\dot{M}g\ddot{S}i^{\frac{3}{4}} + 3\ddot{A}l\ddot{S}i^{\frac{3}{4}} + 12\dot{H}$	
329.	**Delessite**	$(\dot{M}g, \dot{F}e)^3\ddot{S}i^{\frac{3}{4}} + (\ddot{A}l, \ddot{F}e)\ddot{S}i^{\frac{3}{4}} + 3\dot{H}$	6?
330.	**Ripidolite** *G. Rose*	$(\dot{M}g, \dot{F}e)^3\ddot{S}i^{\frac{2}{3}} + \ddot{A}l\ddot{S}i^{\frac{2}{3}} + 3\dot{H}$	6
331.	**Clintonite** *	$\dot{C}a, \dot{M}g, \dot{F}e, \ddot{A}l, \ddot{S}i, \dot{H}$	
332.	**Chloritoid** *	$(\dot{F}e, \dot{M}g)^3\ddot{S}i^{\frac{2}{3}} + 2\ddot{A}l\ddot{S}i^{\frac{2}{3}} + 3\dot{H}$	

No.	Name.	Formula.	System of crystallization.
333.	**Cronstedtite**	$(\dot{M}g, \dot{F}e, \dot{M}n)^3\,\ddot{S}i_{\frac{1}{2}} + \dot{F}e\,\ddot{S}i_{\frac{1}{2}} + 3\dot{H}$	6
334.	**Sideroschisolite**	$\dot{F}e^3\,\ddot{S}i_{\frac{1}{2}} + \frac{1}{2}\dot{H}$	6
335.	**Margarite** *	$(\dot{N}a, \dot{C}a)^3\,\ddot{S}i + 3\ddot{A}l^2\,\ddot{S}i + 3\dot{H}$	3
336.	**Ephesite**	$\dot{N}a, \dot{K}, \dot{C}a, \ddot{A}l, \ddot{S}i, \dot{H}$	

II. Non-Magnesian Hydrous Silicates.

1. *Pyrophyllite Section.*

337.	**Pyrophyllite** *	$\ddot{A}l\,\ddot{S}i^3 + 1\frac{1}{2}\dot{H}$	3
338.	**Pholerite** *	$\ddot{A}l^3\,\ddot{S}i^4 + 6\dot{H}$	
339.	**Anthosiderite**	$\ddot{F}e\,\ddot{S}i^3 + \dot{H}$	

2. *Pectolite Section.*

340.	**Apophyllite** *	$(\dot{C}a, \dot{K})^3\,\ddot{S}i^2 + 2\dot{H}$	2
341.	**Pectolite** *	$(\dot{C}a, \dot{N}a)^4\,\ddot{S}i^3 + \dot{H}$	4
342.	**Okenite**	$\dot{C}a^3\,\ddot{S}i^4 + 6\dot{H}$	3?
343.	**Laumontite** *	$\dot{C}a^3\,\ddot{S}i^2 + 3\ddot{A}l\,\ddot{S}i^2 + 12\dot{H}$	4
344.	**Leonhardite** *	$\dot{C}a^3\,\ddot{S}i^2 + 3\ddot{A}l\,\ddot{S}i^2 + 9\dot{H}$	4
345.	**Catapleiite**	$(\dot{N}a, \dot{C}a)^3\,\ddot{S}i^2 + 2\ddot{Z}r\,\ddot{S}i^2 + 6\dot{H}$	6
346.	**Dioptase**	$\dot{C}u^3\,\ddot{S}i^2 + 3\dot{H}$	6
347.	**Chrysocolla** *	$\dot{C}u^4\,\ddot{S}i^2 + 6\dot{H}$	
348.	**Demidoffite**	$\dot{C}u, \ddot{S}i, \dot{H}$	
349.	**Pyrosmalite**	$*\,4(\dot{R}^3\,\ddot{S}i + 2\dot{R}^3\,\ddot{S}i^2 + 6\dot{H}) + 3FeCl$	6
350.	**Portite**	$\ddot{A}l\,\ddot{S}i^2 + 2\dot{H}$	3

3. *Calamine Section.*

351.	**Tritomite**	† $\ddot{R}\,\ddot{S}i + 2\dot{H}$?	1
352.	**Thorite**	$\dot{T}h^3\,\ddot{S}i + 3\dot{H}$	2
353.	**Cerite**	$(\dot{C}e, \dot{L}a, \dot{D}i)^3\,\ddot{S}i + \dot{H}$	6

* $\dot{R} = \dot{F}e, \dot{M}n.$ † $\ddot{R} = \ddot{C}e.\ \ddot{L}a.$

No.	Name.	Formula.	System of crystallization.
354.	**Calamine ***	$\dot{Z}n^3\ddot{S}i + 1\frac{1}{2}\dot{H}$	3
355.	**Prehnite ***	$\dot{C}a^2\ddot{S}i + \ddot{A}l\ddot{S}i + \dot{H}$	3
356.	**Chlorastrolite †**	$(\dot{C}a, \dot{N}a)^3\ddot{S}i + 2(\ddot{A}l, \ddot{F}e)\ddot{S}i + 3\dot{H}$	
357.	**Savite**	$(\dot{N}a, \dot{M}g)^3\ddot{S}i^2 + \ddot{A}l\ddot{S}i + 2\dot{H}$	3
358.	**Schneiderite**	$3(\dot{C}a, \dot{M}g)^3\ddot{S}i^2 + \ddot{A}l^3\ddot{S}i^2 + 3\dot{H}$	
359.	**Carpholite**	$(\ddot{A}l, \ddot{F}e, \ddot{M}n)\ddot{S}i + 1\frac{1}{2}\dot{H}$	3
		4. *Zeolite Section.*	
360	**Analcime ***	$\dot{N}a^3\ddot{S}i^2 + 3\ddot{A}l\ddot{S}i^2 + 6\dot{H}$	1
361.	**Ittnerite**	$(\dot{N}a, \dot{C}a)^3\ddot{S}i + 3\ddot{A}l\ddot{S}i + 6\dot{H}$	1
362.	**Faujasite**	$(\dot{N}a, \dot{C}a)\ddot{S}i + \ddot{A}l\ddot{S}i^2 + 9\dot{H}$	1
363.	**Chabazite ***	$(\dot{C}a, \dot{N}a, \dot{K})^3\ddot{S}i^2 + 3\ddot{A}l\ddot{S}i^2 + 18\dot{H}$	6
364.	**Gmelinite**	$(\dot{C}a, \dot{N}a, \dot{K})^3\ddot{S}i^2 + 3\ddot{A}l\ddot{S}i^2 + 18\dot{H}$	6
365.	**Levyne**	$\dot{C}a\ddot{S}i + \ddot{A}l\ddot{S}i + 4\dot{H}$	6
366.	**Gismondine**	$(\dot{C}a, \dot{K})^2\ddot{S}i + 2\ddot{A}l\ddot{S}i + 9\dot{H}$	2
367.	**Edingtonite**	$3\dot{B}a\ddot{S}i + 4\ddot{A}l\ddot{S}i + 12\dot{H}$	2
368.	**Harmotome**	$\dot{B}a\ddot{S}i + \ddot{A}l\ddot{S}i^2 + 5\dot{H}$	3
369.	**Phillipsite**	$(\dot{C}a, \dot{K})\ddot{S}i + \ddot{A}l\ddot{S}i^2 + 5\dot{H}$	3
370.	**Thomsonite ***	$(\dot{C}a, \dot{N}a)^3\ddot{S}i + 3\ddot{A}l\ddot{S}i + 7\dot{H}$	3
371.	**Natrolite ***	$\dot{N}a\ddot{S}i + \ddot{A}l\ddot{S}i + 2\dot{H}$	3
372.	**Scolecite**	$\dot{C}a\ddot{S}i + \ddot{A}l\ddot{S}i + 3\dot{H}$	4
373.	**Ellagite**	$\dot{C}a^3\ddot{S}i^4 + \ddot{A}l\ddot{S}i + 12\dot{H}$	4?
374.	**Sloanite**	$(\dot{C}a, \dot{M}g)^7\ddot{S}i^2 + 5\ddot{A}l\ddot{S}i + 9\dot{H}$	3
375.	**Epistilbite**	$(\dot{C}a, \dot{N}a)\ddot{S}i + \ddot{A}l\ddot{S}i^3 + 5\dot{H}$	3
376.	**Heulandite ***	$\dot{C}a\ddot{S}i + \ddot{A}l\ddot{S}i^3 + 5\dot{H}$	4
377.	**Brewsterite**	$(\dot{S}r, \dot{B}a)\ddot{S}i + \ddot{A}l\ddot{S}i^3 + 5\dot{H}$	4
378.	**Stilbite ***	$\dot{C}a\ddot{S}i + \ddot{A}l\ddot{S}i^3 + 6\dot{H}$	3
379.	**Caporcianite**	$\dot{C}a^3\ddot{S}i^2 + 3\ddot{A}l\ddot{S}i^2 + 9\dot{H}$	4

No.	Name.	Formula.	System of crystallization.
		5. *Datholite Section.*	
380.	**Datholite** *	$2\dot{C}a^3\ddot{S}i + \ddot{B}^3\ddot{S}i^2 + 3\dot{H}$	4
381.	**Allophane** *	$\ddot{A}l^3\ddot{S}i^2 + 15\dot{H}$	
382.	**Schrötterite** *	$\ddot{A}l^4\ddot{S}i + 3\dot{H}$	
		Appendix to Hydrous Silicates.	
383.	**Chloropal**	$\ddot{F}e\ddot{S}i^2 + 3\dot{H}$	
384.	**Collyrite**	$\ddot{A}l^3\ddot{S}i + 15\dot{H}$	
385.	**Wolchonskoite**	$*\ \ddot{R}\ddot{S}i + 2\frac{1}{4}\dot{H}$?	
386.	**Chrome Ochre**	$(\ddot{A}l, \ddot{C}r)^3\ddot{S}i^4 + 4\dot{H}$	
387.	**Pimelite**	$(\dot{N}i, \dot{M}g)^3\ddot{S}i + 2(\ddot{A}l, \ddot{F}e)\ddot{S}i + 9\dot{H}$	
388.	**Montmorillonite**	$\dot{C}a, \dot{K}, \ddot{A}l, \ddot{F}e, \ddot{S}i, \dot{H}$	
389.	**Delanovite** ?	$\dot{M}n^3\ddot{S}i^2 + 2\ddot{A}l\ddot{S}i^2 + 45\dot{H}$	
390.	**Erdmanite**	$\dot{C}a, \dot{F}e, \dot{M}n, \dot{Y}, \dot{C}e, \dot{L}a, \ddot{A}l, \ddot{S}i, \dot{H}$	
391.	**Bavalite**	$\dot{C}a, \dot{M}g, \ddot{A}l, \ddot{F}e, \ddot{S}i, \dot{H}$	
		C. Unarranged Silicates containing Titanic Acid.	
392.	**Tscheffkinite**	$((\dot{C}a, \dot{T}i), \ddot{C}e, \ddot{L}a, \ddot{A}l)\ddot{S}i\frac{2}{3}$	
393.	**Schorlomite** †	$\dagger\ 2\dot{R}^3\ddot{S}i\frac{1}{2} + 3\ddot{R}\ddot{S}i\frac{1}{2}$	1
394.	**Mosandrite**	$\ddagger\ \dot{R}^3\ddot{S}i + 2\ddot{R}\ddot{S}i + 4\frac{1}{2}\dot{H}$	3
395.	**Wölherite**	$6(\dot{N}a, \dot{C}a)^3\ddot{S}i + 3\ddot{Z}r\ddot{S}i + \ddot{C}b\ddot{S}i$	3
		Appendix.	
396.	**Turnerite** ?	$\dot{C}a, \dot{M}g, \ddot{A}l, \ddot{S}i$?	4

* $\ddot{R} = \ddot{C}r.\ \ddot{A}l.\ \ddot{F}e.$

† $\dot{R} = \dot{C}a.\quad \ddot{R} = (\dot{C}a.\ \dot{T}i).\ \ddot{F}e.$

‡ $\dot{R} = \dot{C}a.\quad \ddot{R} = (\dot{C}a.\ \dot{T}i).\ \ddot{C}e.\ \ddot{D}.\ \ddot{L}a.$

No.	Name.	Formula.	System of crystallization.

2. Titanates, Tungstates, Molybdates, Tantalates, Columbates, Chromates, Vanadates.

397.	**Perofskite**	Ca Ti	1
398.	**Pyrochlore** *	4(Ca, Mg, Ce, La, Y, U) (Ti, Cb)	1
399.	**Pyrrhite**	Ce, Zr, Cb	1
400.	**Scheelite** *	Ca W	2
401.	**Scheeletine** *	Pb W	2
402.	**Tungstate of Copper?** †	Cu, Ca, W	
403.	**Wulfenite** *	Pb Mo	2
404.	**Azorite**	Ca, Cb	2
405.	**Fergusonite**	(Y, Ce)^6 Cb	2
406.	**Tyrite?**	Y, Ce, Fe, U, Al, Cb	2
407.	**Adelpholite**	Fe, Mn Ta	2
408.	**Tantalite**	(Fe, Mn) Ta	3
409.	**Wolfram** *	2FeW+3MnW and 4FeW+MnW	3
410.	**Columbite** *	(Fe, Mn) Cb	3
411.	**Paracolumbite?** †	Fe, U, and a metallic acid.	
412.	**Samarskite** *	Y, Ce, La, Fe, U, Cb	3
413.	**Mengite**	Fe, Zr, Ti	3
414.	**Polymignyte** *	Y, Ti, Zr, Fe, Ce,	3
415.	**Polycrase**	U, Ti, Zr, Fe, Ce, Cb	3
416.	**Æschynite**	2(Ce, La, Y, Fe) Cb + Ce, Ti^3	3
417.	**Euxenite**	Ca, Mg, Y, Ce, La, U, Ti, Cb	3?
418.	**Yttro-Tantalite**	* R^3 (Ta, W, U)	3
419.	**Parathorite** †	Fe, Ti?	3
420.	**Rutherfordite** †	Ce, Y, Ca, Ti	4

* In the yellow R = Y. In the black R = Y, Ca, Fe. In the brown R = Y, Ca.

No.	Name.	Formula.	System of crystallization.
421.	**Crocoisite**	$\dot{P}b\,\ddot{C}r$	4
422.	**Vauquelinite** *	$(\dot{C}u, \dot{P}b)^3\,\ddot{C}r^2$	4
423.	**Melanochroite**	$\dot{P}b^3\,\ddot{C}r^2$	3?
424.	**Dechenite**	$2(\dot{P}b, \dot{Z}n)^3\,\ddot{V} + (\dot{P}b, \dot{Z}n)^3\,\ddot{A}s$	
425.	**Descloizite**	$\dot{P}b^2\,\ddot{V}$	3
426.	**Vanadinite**	$\dot{P}b^3\,\ddot{V} + \frac{1}{3}Pb\,Cl$	6
427.	**Volborthite**	$(\dot{C}u, \dot{C}a)^4\,\ddot{V} + \dot{H}$	6
428.	**Pateraite?**	$\dot{C}u, \dot{C}o, \ddot{V}$	

3. Sulphates and Selenates.

1. Anhydrous Sulphates.

1. *Trimetric.*

429.	**Glaserite**	$\dot{K}\,\ddot{S}$	3
430.	**Thenardite**	$\dot{N}a\,\ddot{S}$	3
431.	**Barytes** *	$\dot{B}a\,\ddot{S}$	3
432.	**Celestine** *	$\dot{S}r\,\ddot{S}$	3
433.	**Anhydrite** *	$\dot{C}a\,\ddot{S}$	3
434.	**Anglesite** *	$\dot{P}b\,\ddot{S}$	3
435.	**Almagrerite**	$\dot{Z}n\,\ddot{S}$	3
436.	**Leadhillite** *	$\dot{P}b\,\ddot{S} + 3\dot{P}b\,\ddot{C}$	3
437.	**Caledonite** *	$\dot{P}b\,\ddot{S}, \dot{P}b\,\ddot{C}, \dot{C}u\,\ddot{C}$	3

2. *Rhombohedral.*

438.	**Dreelite**	$\dot{C}a\,\ddot{S} + 3\dot{B}a\,\ddot{S}$	6
439.	**Susannite**	$\dot{P}b\,\ddot{S} + 3\dot{P}b\,\ddot{C}$	6

3. *Monoclinic.*

440.	**Glauberite**	$(\frac{1}{2}\dot{N}a + \frac{1}{2}\dot{C}a)\,\ddot{S}$	4
441.	**Lanarkite**	$\dot{P}b\,\ddot{S} + \dot{P}b\,\ddot{C}$	4

No.	Name.	Formula.	System of crystallization.
	Appendix to Anhydrous Sulphates.		
442.	**Reussin**	$\dot{N}a\,\ddot{S}, \dot{M}g\,\ddot{S}, Ca\,Cl$	
443.	**Selenate of Lead**	$\dot{P}b\,\ddot{S}e$	1?
444.	**Connellite**	$\dot{C}u\,\ddot{S}, Cu\,Cl$?	6
445.	**Alumian**	$\ddot{A}l\,\ddot{S}^2$	6?
	2. Hydrous Sulphates.		
446.	**Misenite**	$\dot{K}\,\ddot{S} + \dot{H}\,\ddot{S}$	
447.	**Polyhalite**	$(\dot{K}, \dot{C}a, \dot{M}g)\,\ddot{S} + \frac{1}{2}\dot{H}$	3
448.	**Gypsum** *	$\dot{C}a\,\ddot{S} + 2\dot{H}$	4
449.	**Astrakanite**	$\dot{N}a\,\ddot{S} + \dot{M}g\,\ddot{S} + 4\dot{H}$	
450.	**Löweite**	$\dot{N}a\,\ddot{S} + \dot{M}g\,\ddot{S} + 2\frac{1}{2}\dot{H}$	
451.	**Mascagnine**	$\dot{N}H^4\,\ddot{S} + \dot{H}$	3
452.	**Lecontite**	$(\dot{N}a, \dot{N}H^4)\,\ddot{S} + 2\dot{H}$	3
453.	**Coquimbite**	$\ddot{F}e\,\ddot{S}^3 + 9\dot{H}$	6
454.	**Rœmerite**	$(\dot{F}e, \dot{Z}n)\,\ddot{S} + \ddot{F}e\,\ddot{S}^3 + 12\dot{H}$	4
455.	**Cyanosite** *	$\dot{C}u\,\ddot{S} + 5\dot{H}$	
456.	**Cyanochrome**	$(\frac{1}{2}\dot{K} + \frac{1}{2}\dot{C}u)\,\ddot{S} + 3\dot{H}$	4
457.	**Picromerid**	$(\dot{M}g, \dot{C}u)\,\ddot{S} + 3\dot{H}$	4
458.	**Alunogen** *	$\ddot{A}l\,\ddot{S}^3 + 18\dot{H}$	
459.	**Alum**	$\dot{R}\,\ddot{S} + \ddot{A}l\,\ddot{S}^3 + 24\dot{H}$	1
	459a. Potash Alum *	$\dot{K}\,\ddot{S} +$ " "	
	459b. Solfatarite	$\dot{N}a\,\ddot{S} +$ " "	
	459c. Tschermigite	$\dot{N}H^4\,\ddot{S} +$ " "	
	459d. Pickeringite	$\dot{M}g\,\ddot{S} +$ " "	
	459e. Halotrichite *	$\dot{F}e\,\ddot{S} +$ " "	
	459f. Apjohnite *	$\dot{M}n\,\ddot{S} +$ " "	

No.	Name.	Formula.	System of crystallization.
460.	Voltaite	$\dot{F}e\,\ddot{S} + \ddot{F}e\,\ddot{S}^3 + 24\dot{H}$	1
461.	Epsomite *	$\dot{M}g\,\ddot{S} + 7\dot{H}$	3
462.	Tauriscite ?	$\dot{F}e\,\ddot{S} + 7\dot{H}$	3
463.	Mangan Vitriol ?	$\dot{M}n, \ddot{S}, \dot{H}$	
464.	Goslarite	$\dot{Z}n\,\ddot{S} + 7\dot{H}$	
465.	Copperas *	$\dot{F}e\,\ddot{S} + 7\dot{H}$	4
466.	Bieberite	$(\dot{C}o, \dot{M}g)\,\ddot{S} + 7\dot{H}$	4
467.	Pyromeline *	$\dot{N}i, \ddot{S}, \dot{H}$	6?
468.	Morenosite	$\dot{N}i, \ddot{S}, \dot{H}$	
469.	Johannite	$2(\dot{U}\,\ddot{U})\,\ddot{S} + (\dot{C}u\,\ddot{S}) + 4\dot{H}$	4
470.	Basic Sulphate of Uranium	$2(\dot{U}\,\ddot{U})^3\,\ddot{S}^2 + \dot{C}a, \dot{C}u)\,\ddot{S} + 10\dot{H}$	
471.	Glauber Salt *	$\dot{N}a\,\ddot{S} + 10\dot{H}$	4
472.	Botryogen	$\dot{F}e^3\,\ddot{S}^2 + 3\ddot{F}e\,\ddot{S}^2 + 36\dot{H}$	4
473.	Copiapite	$\ddot{F}e^2\,\ddot{S}^5 + 18\dot{H}$	
474.	Apatelite	$2\ddot{F}e^2\,\ddot{S}^3 + 3\dot{H}$	
475.	Alunite *	$\dot{K}\,\ddot{S} + 3\ddot{A}l\,\ddot{S} + 6\dot{H}$	6
476.	Jarosite	$\dot{K}\,\ddot{S} + 4\ddot{F}e\,\ddot{S} + 9\dot{H}$	6
477.	Websterite	$\ddot{A}l\,\ddot{S} + 9\dot{H}$	
478.	Loewigite	$\dot{K}\,\ddot{S} + 3\ddot{A}l\,\ddot{S} + 9\dot{H}$	
479.	Pissophane	$(\ddot{F}e, \ddot{A}l)^5\,\ddot{S}^2 + 30\dot{H}$	
480.	Linarite	$\dot{P}b\,\ddot{S} + \dot{C}u\,\dot{H}$	4
481.	Brochantite *	$\dot{C}u^4\,\ddot{S} + 3\dot{H}$	3
482.	Lettsomite	$(\dot{C}u^6\,\ddot{S} + 3\dot{H}) + (\ddot{A}l\,\ddot{S} + 9\dot{H})$	
483.	Medjidite	$\ddot{U}\,\ddot{S} + \dot{C}a\,\ddot{S} + 15\dot{H}$	
484.	Uranochre	$3\ddot{U}^3\ddot{S} + 14\dot{H}$ and $2\ddot{U}^3\ddot{S} + \dot{C}a\,\ddot{S} + 28\dot{H}$	
485.	Uranochalcite	$\dot{U}\,\ddot{U} + 2\dot{C}a\,\ddot{S} + \dot{C}u\,\ddot{S} + 18\dot{H}$	

No.	Name.	Formula.	System of crystallization.
		4. Borates.	
486.	**Boracite**	$2(\dot{M}g^3\ddot{B}^4) + Mg\,Cl$	1
487.	**Rhodizite**	$\dot{C}a^3\ddot{B}^4$?	1
488.	**Hydroboracite**	$\dot{C}a^3\ddot{B}^4 + \dot{M}g^3\ddot{B}^4 + 18\dot{H}$	
489.	**Hayesine**	$\dot{C}a\,\ddot{B}^4 + 10\dot{H}$	
490.	**Boronatrocalcite**	$\dot{N}a\,\ddot{B}^4 + \dot{C}a^3\,\ddot{B}^5 + 12\dot{H}$	
491.	**Borax** *	$\dot{N}a\,\ddot{B}^2 + 10\dot{H}$	4
492.	**Lagonite**	$\dot{F}e\,\ddot{B}^3 + 3\dot{H}$	
493.	**Larderellite**	$\dot{N}H^4\,\ddot{B}^4 + 4\dot{H}$	
494.	**Warwickite** †	$\dot{M}g, \dot{F}e, \dot{T}i, \ddot{B}$	4
		5. Phosphates, Arsenates, Antimonates, Nitrates.	
		a. Anhydrous.	
		1. *Hexagonal.*	
495.	**Apatite** *	$\dot{C}a^3\ddot{P} + \frac{1}{3}Ca\,(Cl, F)$	6
496.	**Hydroapatite**	$\dot{C}a^3\ddot{P} + \frac{1}{3}Ca\,F + \dot{H}$	
497.	**Cryptolite**	$\dot{C}e^3\ddot{P}$	6
498.	**Pyromorphite** *	$\dot{P}b^3\ddot{P} + \frac{1}{3}Pb\,Cl$	6
499.	**Mimetene***	$(\dot{P}b, \dot{C}a)^3\,(\ddot{A}s, \ddot{P}) + \frac{1}{3}Pb\,Cl$	6
		2. *Dimetric.*	
500.	**Xenotime** *	$(\dot{Y}, \dot{C}e)^1\ddot{P}$	2
		3. *Monoclinic.*	
501.	**Monazite** *	$(\dot{C}e, \dot{L}a, Th)^3\ddot{P}$	4
502.	**Wagnerite**	$\dot{M}g^3\ddot{P} + Mg\,F$	4
503.	**Kühnite**	$(\dot{C}a, \dot{M}g, \dot{M}n)^3\ddot{A}s$	
504.	**Lazulite** *	$2(\dot{M}g, \dot{F}e)^3\ddot{P} + \ddot{A}l^5\ddot{P}^3 + 5\dot{H}$	4
505.	**Turquois** *	$\ddot{A}l^2\ddot{P} + 5\dot{H}$	
506.	**Conarite** ?	$\dot{N}i, \ddot{P}, \dot{H}$	4?

No.	Name.	Formula.	System of crystallization.
		4. *Trimetric.*	
507	**Triphyline** *	$(\dot{F}e, \dot{M}n, \dot{L}i)^3 \ddot{P}$	3
508.	**Triplite**	$(\dot{M}n, \dot{F}e)^4 \ddot{P}$	3
509.	**Fischerite**	$\ddot{A}l^2 \ddot{P} + 8\dot{H}$	3
		Appendix.	
510.	**Hopeite**	$\dot{Z}n, \ddot{P}, Aq$	3
511.	**Amblygonite** *	$(2(\dot{L}i, \dot{N}a)^3 \ddot{P} + 2\ddot{A}l \ddot{P}) + (Al^2 F^3 + \ddot{A}l)$	3
512.	**Herderite**	$\ddot{A}l, \dot{C}a, \ddot{P}, F$	3
513.	**Carminite**	$\dot{P}b^3 \ddot{A}s + 5\dot{F}e \ddot{A}s$	3?
514.	**Romeine**	$\dot{C}a^3, \ddot{S}b, \ddot{S}b$	2
		b. Hydrous.	
515.	**Thrombolite**	$\dot{C}u^3 \ddot{P}^2 + 6\dot{H}$?	
516.	**Stercorite**	$(\dot{N}a, \dot{N}H^4) \ddot{P} + 9\dot{H}$	
517.	**Struvite**	$\dot{N}H^4 \dot{M}g^2 \ddot{P} + 12\dot{H}$	
518.	**Haidingerite**	$\dot{C}a^2 \ddot{A}s + 4\dot{H}$	3
519.	**Pharmacolite**	$\dot{C}a^2 \ddot{A}s + 6\dot{H}$	4
520.	**Vivianite** *	$\dot{F}e^3 \ddot{P} + 8\dot{H}$	4
521.	**Erythrine** *	$\dot{C}o^3 \ddot{A}s + 8\dot{H}$	4
522.	**Hörnesite**	$\dot{M}g^3 \ddot{A}s + 8\dot{H}$	4
523.	**Roesslerite**	$\dot{M}g^2 \ddot{A}s + 15\dot{H}$	
524.	**Annabergite** *	$\dot{N}i^3 \ddot{A}s + 8H$	
525.	**Köttigite**	$(\dot{Z}n, \dot{C}o, \dot{N}i)^3 \ddot{A}s + 8\dot{H}$	4
526.	**Symplesite**	$3\dot{F}e \ddot{A}s^2 + 8\dot{H}$	4
527.	**Trichalcite**	$\dot{C}u^3 \ddot{A}s + 5\dot{H}$	
528.	**Scorodite** *	$\dot{F}e \ddot{A}s + 4\dot{H}$	3
529.	**Libethenite**	$\dot{C}u^4 \ddot{P} + \dot{H}$	3

No.	Name.	Formula.	System of crystallization.
530.	**Olivenite**	$\dot{C}u^4\,(\ddot{A}s, \ddot{P}) + \dot{H}$	3
531.	**Conichalcite**	$(\dot{C}u, \dot{C}a)^4\,(\ddot{P}, \ddot{A}s) + 1\frac{1}{2}\dot{H}$	
532.	**Euchroite**	$\dot{C}u^4\,\ddot{A}s + 7\dot{H}$	3
533.	**Arseniosiderite**	$\dot{C}a^6\,\ddot{A}s + 4\ddot{F}e^2\,\ddot{A}s + 15\dot{H}$	1
534.	**Pharmacosiderite**	$\ddot{F}e^4\,\ddot{A}s^3 + 18\dot{H}$	1
535.	**Wavellite** *	$\ddot{A}l^3\,\ddot{P}^2 + 12\dot{H}$	3
536.	**Cacoxene** *	$\ddot{F}e^2\ddot{P} + 12\dot{H}$	
537.	**Childrenite** *	$((\dot{M}g, \dot{F}e, \dot{M}n)^3, \ddot{A}l)^5\,\ddot{P}^3 + 15\dot{H}$	3
538.	**Erinite**	$\dot{C}u^5\,\ddot{A}s + 2\dot{H}$	
539.	**Cornwallite**	$\dot{C}u^5\,\ddot{A}s + 5\dot{H}$	
540.	**Phosphochalcite** *	$\dot{C}u^5\,\ddot{P} + 2\frac{1}{2}\dot{H}$	3
541.	**Tagilite**	$\dot{C}u^4\,\ddot{P} + 3\dot{H}$	
542.	**Tyrolite**	$Cu^5\,\ddot{A}s + 10\dot{H} + \dot{C}a\,\ddot{C}$?	3
543.	**Delvauxene**	$\ddot{F}e^2\,\ddot{P} + 24\dot{H}$	
544.	**Dufrenite** *	$\ddot{F}e^2\,\ddot{P} + 2\frac{1}{2}\dot{H}$	3
545.	**Aphanesite**	$\dot{C}u^6\,\ddot{A}s + 3\dot{H}$	4
546.	**Chalcophyllite**	$\dot{C}u^6\,\ddot{A}s + 12\dot{H}$	6
547.	**Liroconite**	$5\dot{C}u^5\,\ddot{A}s + \ddot{A}l^3\,\ddot{P} + 75\dot{H}$	4
548.	**Uranite** *	$(\dot{C}a, \ddot{U}^2)\,\ddot{P} + 12\dot{H}$	3
549.	**Chalcolite**	$(Cu, \ddot{U}^2)\,\ddot{P} + 8\dot{H}$	2
550.	**Carphosiderite**	$\ddot{F}e, \ddot{P}, \dot{H}$	
551.	**Plumbo Resinite**	$\dot{P}b^3\,\ddot{P} + 6\ddot{A}l\,\dot{H}$	
552.	**Calcoferrite**	$6(\dot{C}a, \dot{M}g), 3(\ddot{A}l, \ddot{F}e), 4\ddot{P}, 20\dot{H}$	

Sulphato-Phosphates.

553.	**Pitticite** *Haus* *	$\ddot{F}e^2\,\ddot{S}^3 + 2\ddot{F}e\,\ddot{A}s + 24\dot{H}$	
554.	**Diadochite**	$\ddot{F}e^3\,\ddot{P}^2 + 2\ddot{F}e\,\ddot{S}^2 + 36\dot{H}$	

No.	Name.	Formula.	System of crystallization.
		Appendix.	
555.	**Lindackerite?**	$2\dot{C}u^3\,\ddot{A}s + \dot{N}i^3\,\ddot{S} + 8\dot{H}$	3
		c. NITRATES.	
556.	**Nitrammite ***	$\dot{N}H^4\,\ddot{N}$	
557.	**Nitre ***	$\dot{K}\,\ddot{N}$	3
558.	**Nitratine**	$\dot{N}a\,\ddot{N}$	6
559.	**Nitrocalcite ***	$\dot{C}a\,\ddot{N} + \dot{H}$	
		6. Carbonates.	
		1. *Anhydrous Carbonates.*	
560.	**Calcite ***	$\dot{C}a\,\ddot{C}$	6
561.	**Magnesite ***	$\dot{M}g\,\ddot{C}$	
562.	**Dolomite ***	$(\dot{C}a, \dot{M}g)\,\ddot{C}$	6
563.	**Breunnerite**	$(\dot{M}g, \dot{F}e, \dot{M}n)\,\ddot{C}$	
564.	**Chalybite ***	$\dot{F}e\,\ddot{C}$	6
565.	**Diallogite ***	$\dot{M}n\,\ddot{C}$	6
566.	**Smithsonite ***	$\dot{Z}n\,\ddot{C}$	6
567.	**Aragonite ***	$\dot{C}a\,\ddot{C}$	3
568.	**Witherite**	$\dot{B}a\,\ddot{C}$	3
569.	**Strontianite ***	$\dot{S}r\,\ddot{C}$	3
570.	**Bromlite**	$\dot{B}a\,\ddot{C} + \dot{C}a\,\ddot{C}$	3
571.	**Manganocalcite**	$\dot{M}n\,\ddot{C}, \dot{F}e\,\ddot{C}, \dot{C}a\,\ddot{C}, \dot{M}g\,\ddot{C}$	3?
572.	**Cerusite ***	$\dot{P}b\,\ddot{C}$	3
573.	**Barytocalcite**	$\dot{B}a\,\ddot{C} + \dot{C}a\,\ddot{C}$	4
		2. *Hydrous Carbonates.*	
574.	**Bicarbonate of Ammonia**	$\dot{N}H^4\,\ddot{C}^2 + \dot{H}$	
575.	**Trona ***	$\dot{N}a^2\,\ddot{C}^3 + 4\dot{H}$	4

No.	Name.	Formula.	System of crystallization.
576.	**Thermonatrite**	$\dot{N}a\,\ddot{C} + \dot{H}$	3
577.	**Natron** *	$\dot{N}a\,\ddot{C} + 10\dot{H}$	4
578.	**Gay-Lussite**	$\dot{N}a\,\ddot{C} + \dot{C}a\,\ddot{C} + 5\dot{H}$	4
579.	**Lanthanite** *	$\dot{L}a\,\ddot{C} + 3\dot{H}$	3
580.	**Hydromagnesite** *	$\dot{M}g^4\,\ddot{C}^3 + 4\dot{H}$	4
581.	**Hydrocalcite**	$\dot{C}a\,\ddot{C} + 5\dot{H}$	6
582.	**Malachite** *	$\dot{C}u^2\,\ddot{C} + \dot{H}$	4
583.	**Azurite** *	$2\dot{C}u\,\ddot{C} + \dot{C}u\,\dot{H}$	4
584.	**Aurichalcite** *	$2(\dot{Z}n, \dot{C}u)\,\ddot{C} + 3(\dot{Z}n, \dot{C}u)\,\dot{H}$	
585.	**Zinc Bloom** *	$\dot{Z}n^3\,\ddot{C} + 3\dot{H}$	
586.	**Emerald Nickel** *	$\dot{N}i^3\,\ddot{C} + 6\dot{H}$	
587.	**Remingtonite** †	$\dot{C}o\,\ddot{C} + Aq$?	
588.	**Zippeite** *	$\ddot{U}^3\ddot{S}^2 + 12\dot{H}$ and $\ddot{U}^3\ddot{S}^2 + \dot{C}u\,\ddot{S} + 12\dot{H}$	
589.	**Liebigite**	$\ddot{U}\,\ddot{C} + \dot{C}a\,\ddot{C} + 20\dot{H}$	
590.	**Voglite**	$2\dot{U}\,\ddot{C} + \dot{C}a\,\ddot{C} + \dot{C}u^3\,\ddot{C}^2 + 14\dot{H}$	
591.	**Bismutite** *	$\ddot{B}i^4\,\ddot{C}^3\,\dot{H}^4$	

3. *Carbonates with a Chloride or Fluoride.*

592.	**Parisite**	$8(\dot{C}e,\dot{L}a,\dot{D})\ddot{C} + 2CaF + (\dot{C}e,\dot{L}a,\dot{D})\dot{H}^2$	6
593.	**Kischtimite**	$3\dot{L}a\,\ddot{C} + Ce^2\,(Fl, O)^3 + \dot{H}$	
594.	**Cerasine**	$Pb\,Cl + \dot{P}b\,\ddot{C}$	2

7. Oxalates.

595.	**Whewellite**	$\dot{C}a\,\ddot{\ddot{C}} + \dot{H}$	4
596.	**Oxalite**	$2\dot{F}e\,\ddot{\ddot{C}} + 3\dot{H}$	
597.	**Thierschite**	$\dot{C}a, \ddot{\ddot{C}}$	

No.	Name.	Formula.	System of crystallization.

E. RESINS AND ORGANIC COMPOUNDS.

598.	**Amber** *	$C^{10} H^{8} O$	
599.	**Copaline**	$C^{40} H^{32} O$	
600.	**Middletonite**	$C^{20} H^{10} + \dot{H}$	
601.	**Retinite** *		
602.	**Scleretinite**	$C^{10} H^{7} O$	
603.	**Guyaquillite**	$C^{20} H^{13} O^{3}$	
604.	**Piauzite**		
605.	**Walchowite**	$C^{12} H^{9} O$	
606.	**Bitumen** *	$C^{6} H^{5}$	
607.	**Idrialine**	$C^{42} H^{14} O$	
608.	**Pyropissite**		
609.	**Brewstoline**	$\ddot{C}$?	
610.	**Elaterite** *	C, H	
611.	**Scheererite**	$C H^{2}$?	4
612.	**Könlite**	$C^{2} H$	
613.	**Fichtelite**	$C^{4} H^{3}$	4
614.	**Könleinite**	$C^{38} H^{18}$	
615.	**Hartite**	$C^{6} H^{5}$	4
616.	**Hartine**	$C^{20} H^{17} O^{2}$	3
617.	**Ixolyte**		
618.	**Hatchettine**	C, H	
619.	**Ozocerite**	C, H	
620.	**Chrismatine**		
621.	**Dopplerite.**	$C^{3} H^{5} O^{5}$	

No.	Name.	Formula.	System of crystallization.
622.	**Dinite**		
623.	**Hircine**		
624.	**Jaulingite**		
625.	**Melanchyme**		
626.	**Anthracoxene**		
627.	**Baikerite**		
628.	**Krantzite**		
629.	**Mellite**	$\ddot{A}l\,\bar{M}^3 + 18\dot{H}$	2

CHECK LIST OF MINERALS.

1. Gold *
2. Platinum *
3. Platiniridium *
4. Palladium
5. Quicksilver
6. Amalgam
7. Arquerite
8. Gold Amalgam *
9. Silver *
10. Bismuth Silver
11. Copper *
12. Lead
13. Iron
14. Tin
15. Zinc
16. Iridosmine *
17. Tellurium
18. Bismuth *
19. Tetradymite *
20. Antimony
21. Arsenic *
22. Arsenical Anti-
23. Sulphur * [mony *
24. Selenium
25. Selensulphur
26. Diamond *
27. Mineral Coal
    27a. Anthracite *
    27b. Bituminous
    27c. Jet * [Coal *
    27d. Lignite *
28. Graphite *
29. Realgar
30. Orpiment *
31. Dimorphine
32. Bismuthine *
33. Stibnite *
34. Discrasite
35. Domeykite *
36. Algodonite *
37. Whitneyite *
38. Silver Glance *
39. Erubescite *
40. Galena *
41. Steinmannite
42. Cuproplumbite ?
43. Alisonite
44. Manganblende
45. Syepoorite
46. Eisennickelkies
47. Clausthalite
48. Naumannite
49. Berzelianite
50. Eucairite
51. Hessite *
52. Altaite
53. Grünauite
54. Blende *
55. Copper Glance *
56. Akanthite
57. Stromeyerite
58. Cinnabar *
59. Millerite *
60. Pyrrhotine *
61. Greenockite
62. Wurtzite
63. Onofrite
64. Copper Nickel *
65. Breithauptite *
66. Kaneite
67. Schreibersite
68. Pyrites *
69. Hauerite
70. Smaltine *
71. Cobaltine
72. Gersdorffite *
73. Ullmannite
74. Marcasite *
75. Rammelsbergite
76. Leucopyrite *
77. Mispickel *
78. Glaucodot
79. Sylvanite *
80. Nagyagite
81. Covelline
82. Molybdenite *
83. Riolite
84. Skutterudite
85. Linnæite *
86. Cuban
87. Chalcopyrite *
88. Barnhardite *
89. Tin Pyrites
90. Sternbergite
91. Wolfsbergite
92. Tannenite
93. Berthierite
94. Zinkenite
95. Miargyrite

96. Plagionite
97. Jamesonite
98. Heteromorphite
99. Brongniardite
100. Chiviatite
101. Dufrenoysite
102. Pyrargyrite
103. Proustite *
104. Freieslebenite *
105. Bournonite
106. Kenngottite
107. Boulangerite
108. Aikinite
109. Wölchite
110. Clayite?
111. Kobellite?
112. Meneghinite
113. Tetrahedrite *
114. Tennantite *
115. Geocronite *
116. Polybasite
117. Stephanite
118. Enargite *
119. Xanthocone
120. Fireblende
121. Wittichite
122. Calomel
123. Sylvine
124. Salt *
125. Sal Ammoniac
126. Kerargyrite
127. Embolite
128. Bromyrite
129. Iodo-bromid of
130. Fluor * [Silver
131. Yttrocerite *
132. Iodyrite
133. Coccinite
134. Fluocerite
135. Fluocerine
136. Cotunnite
137. Muriatic Acid
138. Cryolite
139. Chiolite
140. Fluellite
141. Carnallite
142. Tachhydrite
143. Periclase
144. Red Copper *
145. Martite *
146. Iserine
147. Irite?
148. Spinel *
149. Magnetite *
150. Magnoferrite
151. Franklinite *
152. Chromic Iron *
153. Pitchblende
154. Melaconite *
155. Plumbic Ochre *
156. Water *
157. Zincite *
158. Corundum *
159. Hematite *
160. Ilmenite *
161. Plattnerite
162. Tenorite
163. Braunite *
164. Hausmannite *
165. Cassiterite *
166. Rutile *
167. Anatase *
168. Chalcotrichite *
169. Chrysoberyl *
170. Brookite *
171. Pyrolusite *
172. Polianite
173. Minium *
174. Crednerite
175. Heteroclin
176. Palladinite? *
177. Voltzite
178. Matlockite
179. Mendipite
180. Percylite?
181. Karelinite?
182. Diaspore *
183. Göthite *
184. Manganite
185. Limonite *
186. Brucite *
187. Gibbsite *
188. Völknerite *
189. Hydrotalcite
190. Psilomelane *
191. Newkirkite
192. Wad *
193. Atacamite
194. Arsenolite *
195. Senarmontite
196. Valentinite
197. Bismuth Ochre *
198. Kermesite
199. Retzbanyite
200. Cervantite
201. Volgerite
202. Ammiolite
203. Sulphurous Acid
204. Telluric Ochre
205. Sulphuric Acid *
206. Wolframine *
207. Molybdine *
208. Carbonic Acid *
209. Sassolin
210. Quartz *
  210a. Jasper *
  210b. Agate *
  210c. Chalcedony *
211. Opal *
  211a. Precious opal
  211b. Semi-opal *
  211c. Hyalite
  211d. Geyserite
212. Edelforsite
213. Wollastonite *
214. Pyroxene
  214a. Diopside *
  214b. Hedenbergite*
  214c. Augite *
215. Pelicanite
216. Spodumene *
217. Prehnitoid
218. Amphibole
  218a. Tremolite *
  218b. Actinolite *
  218c. Hornblende *
219. Acmite
220. Strakonitzite?

221. Enstatite
222. Anthophyllite *
223. Hypersthene *
224. Wichtyne
225. Babingtonite *
226. Rhodonite *
227. Beryl *
228. Eudialyte
229. Eulytine
230. Leucophane
231. Melinophane
232. Peridot
  232a. Forsterite *
  232b. Chrysolite *
  232c. Fayalite *
233. Tephroite *
234. Knebelite
235. Chondrodite *
336. Willemite *
237. Phenacite *
238. Garnet
  238a. Pyrope *
  238b. Grossular *
  238c. Almandine *
  238d. Spessartine *
  238e. Melanite *
  238f. Ouvarovite
239. Helvin
240. Zircon *
241. Auerbachite
242. Alvite ?
243. Tachyaphaltite
244. Idocrase *
245. Sarcolite
246. Meionite
247. Scapolite *
248. Mellilite
249. Dipyre
250. Epidote
  250a. Pistacite *
  250b. Zoisite *
  250c. Piedmontite
251. Allanite *
252. Partschin
253. Zoisite *Brooke*
254. Gadolinite
255. Danburite †
256. Axinite *
257. Iolite *
258. Muscovite *
259. Phlogopite *
260. Biotite *
261. Astrophyllite
262. Lepidomelane
263. Lepidolite *
264. Sodalite *
265. Lapis Lazuli
266. Häuyne
267. Nosean
268. Skolopsite
269. Leucite
270. Nepheline *
271. Cancrinite *
272. Anorthite
273. Andesine *
274. Barsowite
275. Bytownite ?
276. Labradorite *
277. Oligoclase *
278. Albite *
279. Orthoclase *
280. Petalite *
281. Cyclopite
282. Weissigite ?
283. Pollux
284. Isopyre
285. Silicate of Yttria?
286. Polychroilite
287. Gehlenite
288. Andalusite *
289. Topaz *
290. Staurotide *
291. Carolathine
292. Lievrite *
293. Kyanite *
294. Sillimanite *
295. Sapphirine
296. Euclase
297. Sphene *
298. Keilhauite
299. Tourmaline *
300. Talc *
301. Meerschaum
302. Neolite
303. Spadaite
304. Chlorophæite
305. Crocidolite
306. Picrophyll
307. Kerolite *
308. Monradite
309. Aphrodite
310. Picrosmine
311. Saponite *
312. Serpentine *
313. Deweylite *
314. Hydrophite *
315. Nickel Gymnite *
316. Ottrelite *
317. Groppite
318. Stilpnomelane
319. Chalcodite †
320. Eukamptite
321. Melanhydrite
322. Hisingerite
323. Thuringite *
324. Euphyllite †
325. Pyrosclerite *
326. Pseudophite ?
327. Thermophyllite?
328. Chlorite
  328a. Chlorite
  328b. Pennine
  328c. Clinochlore
329. Delessite
330. Ripidolite *G. Rose*
331. Clintonite *
332. Chloritoid *
333. Cronstedtite
334. Sideroschisolite
335. Margarite *
336. Ephesite
337. Pyrophyllite *
338. Pholerite *
339. Anthosiderite
340. Apophyllite *
341. Pectolite *
342. Okenite
343. Laumontite *

344. Leonhardite *
345. Catapleiite
346. Dioptase
347. Chrysocolla *
348. Demidoffite
349. Pyrosmalite
350. Portite
351. Tritomite
352. Thorite
353. Cerite
354. Calamine *
355. Prehnite *
356. Chlorastrolite †
357. Savite
358. Schneiderite
359. Carpholite
360. Analcime *
361. Ittnerite
362. Faujasite
363. Chabazite *
364. Gmelinite
365. Levyne
366. Gismondine
367. Edingtonite
368. Harmotome
369. Phillipsite
370. Thomsonite *
371. Natrolite *
372. Scolecite
373. Ellagite
374. Sloanite
375. Epistilbite
376. Heulandite *
377. Brewsterite
378. Stilbite *
379. Caporcianite
380. Datholite *
381. Allophane *
382. Schrötterite *
383. Chloropal
384. Collyrite
385. Wolchonskoite
386. Chrome Ochre
387. Pimelite
388. Montmorillonite
389. Delanovite ?
390. Erdmanite
391. Bavalite
392. Tscheffkinite
393. Schorlomite †
394. Mosandrite
395. Wölherite
396. Turnerite ?
397. Perofskite
398. Pyrochlore *
399. Pyrrhite
400. Scheelite *
401. Scheeletine
402. Tungstate of Cop-
403. Wulfenite * [per †
404. Azorite
405. Fergusonite
406. Tyrite ?
407. Adelpholite
408. Tantalite
409. Wolfram *
410. Columbite *
411. Paracolumbite ? †
412. Samarskite *
413. Mengite
414. Polymignyte *
415. Polycrase
416. Æschynite
417. Euxenite
418. Yttro-Tantalite
419. Parathorite †
420. Rutherfordite †
421. Crocoisite
422. Vauquelinite *
423. Melanochroite
424. Dechenite
425. Descloizite
426. Vanadinite
427. Volborthite
428. Pateraite ?
429. Glaserite
430. Thenardite
431. Barytes *
432. Celestine *
433. Anhydrite *
434. Anglesite *
435. Almagrerite
436. Leadhillite *
437. Caledonite *
438. Dreelite
439. Susannite
440. Glauberite
441. Lanarkite
442. Reussin
443. Selenate of Lead
444. Connellite
445. Alumian
446. Misenite
447. Polyhalite
448. Gypsum *
449. Astrakanite
450. Löweite
451. Mascagnine
452. Lecontite
453. Coquimbite
454. Rœmerite
455. Cyanosite *
456. Cyanochrome
457. Picromerid
458. Alunogen *
459. Alum
459a. Potash Alum* .
459b. Solfatarite
459c. Tschermigite
459d. Pickeringite
459e. Halotrichite*
459f. Apjohnite *
460. Voltaite
461. Epsomite *
462. Tauriscite ?
463. Mangan Vitriol
464. Goslarite
465. Copperas *
466. Bieberite
467. Pyromeline *
468. Morenosite
469. Johannite [Uran.
470. Bas. Sulph. of
471. Glauber Salt *
472. Botryogen
473. Copiapite
474. Apatelite
475. Alunite *

476. Jarosite
477. Websterite
478. Loewigite
479. Pissophane
480. Linarite
481. Brochantite
482. Lettsomite
483. Medjidite
484. Uranochre
485. Uranochalcite
486. Boracite
487. Rhodizite
488. Hydroboracite
489. Hayesine
490. Borocalcite
491. Borax
492. Lagonite
493. Larderellite
494. Warwickite †
495. Apatite *
496. Hydroapatite
497. Cryptolite
498. Pyromorphite *
499. Mimetene *
500. Xenotime *
501. Monazite *
502. Wagnerite
503. Kühnite
504. Lazulite *
505. Turquois *
506. Conarite ?
507. Triphyline *
508. Triplite
509. Fischerite
510. Hopeite
511. Amblygonite *
512. Herderite
513. Carminite
514. Romeine
515. Thrombolite
516. Stercorite
517. Struvite
518. Haidingerite
519. Pharmacolite
520. Vivianite *
521. Erythrine *
522. Hörnesite
523. Roesslerite
524. Annabergite *
525. Köttigite
526. Symplesite
527. Trichalcite
528. Scorodite *
529. Libethenite
530. Olivenite
531. Conichalcite
532. Euchroite
533. Arseniosiderite
534. Pharmacosiderite
535. Wavellite *
536. Cacoxene *
537. Childrenite *
538. Erinite
539. Cornwallite
540. Phosphochalcite *
541. Tagilite
542. Tyrolite
543. Delvauxene
544. Dufrenite *
545. Aphanesite
546. Chalcophyllite
547. Liroconite
548. Uranite *
549. Chalcolite
550. Carphosiderite
551. Plumbo Resinite
552. Calcoferrite
553. Pitticite *Haus* *
554. Diadochite
555. Lindackerite ?
556. Nitrammite *
557. Nitre *
558. Nitratine
559. Nitrocalcite *
560. Calcite *
561. Magnesite *
562. Dolomite *
563. Breunnerite
564. Chalybite *
565. Diallogite *
566. Smithsonite *
567. Aragonite *
568. Witherite
569. Strontianite *
570. Bromlite
571. Manganocalcite
572. Cerusite *
573. Barytocalcite
574. Bicarbonate of
575. Trona * [Ammon
576. Thermonatrite
577. Natron *
578. Gay-Lussite
579. Lanthanite *
580. Hydromagnesite *
581. Hydrocalcite
582. Malachite *
583. Azurite *
584. Aurichalcite *
585. Zinc Bloom *
586. Emerald Nickel *
587. Remingtonite †
588. Zippeite *
589. Liebigite
590. Voglite
591. Bismutite *
592. Parisite
593. Kischtimite
594. Cerasine
595. Whewellite
596. Oxalite
597. Thierschite
598. Amber *
599. Copaline
600. Middletonite
601. Retinite *
602. Scleretinite
603. Guyaquillite
604. Piauzite
605. Walchowite
606. Bitumen *
607. Idrialine
608. Pyropissite
609. Brewstoline
610. Elaterite *
611. Scheererite
612. Könlite
613. Fichtelite

614. **Könleinite**
615. **Hartite**
616. **Hartine**
617. **Ixolyte**
618. **Hatchettine**
619. **Ozocerite**
620. **Chrismatine**
621. **Dopplerite**
622. **Dinite**
623. **Hircine**
624. **Jaulingite**
625. **Melanchyme**
626. **Anthracoxene**
627. **Baikerite**
628. **Krantzite**
629. **Mellite**

ALPHABETICAL INDEX.

Acmite, 12
Actinolite, 12
Adelpholite, 21
Æschynite, 21
Agate, 11
Aikinite, 6
Akanthite, 4
Albite, 15
Algodonite, 3
Alisonite, 3
Allanite, 14
Allophane, 20
Almagrerite, 22
Almandine, 13
Altaite, 3
Alum, 23
Alumian, 23
Alunite, 24
Alunogen, 23
Alvite, 13
Amalgam, 1
Amber, 30
Amblygonite, 26
Ammiolite, 10
Amphibole, 12
Analcime, 19
Anatase, 9
Andalusite, 15
Andesine, 15
Anglesite, 22
Anhydrite, 22
Annabergite, 26
Anorthite, 15
Anthophyllite, 12
Anthosiderite, 18
Anthracite, 2
Anthracoxene, 31
Antimony, 2
Apatelite, 24
Apatite, 25
Aphanesite, 27
Aphrodite, 16
Apjohnite, 23
Apophyllite. 18
Aragonite, 28
Arquerite, 1
Arsenic, 2
Arsenical antimony, 2
Arseniosiderite, 27
Arsenolite, 10
Astrakanite, 23
Astrophyllite, 14
Atacamite, 10
Auerbachite, 13
Augite, 11
Aurichalcite, 29
Axinite, 14
Azorite, 21
Azurite, 29

Babingtonite, 12
Baikerite, 31
Barnhardite, 5
Barsowite, 15
Barytes, 22
Barytocalcite, 28
Bavalite, 20
Berthierite, 5
Beryl, 12
Berzelianite, 3
Bicarbonate of ammonia, 28
Bieberite, 24
Biotite, 14
Bismuth, 2
Bismuth ochre, 10
Bismuth silver, 1
Bismuthine, 2
Bismutite, 29
Bitumen, 30
Bituminous coal, 2
Blende, 3
Boracite, 25
Borax, 25
Boronatrocalcite,52
Botryogen, 24
Boulangerite, 6
Bournonite, 6
Braunite, 9
Breithauptite, 4
Breunnerite, 28
Brewsterite, 19
Brewstoline, 30
Brochantite, 24
Bromite, 28
Bromyrite, 7
Brongniardite, 5
Brookite, 9
Brucite, 10
Bytownite, 15

Cacoxene, 27
Calamine, 19
Calcite, 28
Calcoferrite, 27
Caledonite, 22
Calomel, 6
Cancrinite, 15
Caporcianite, 19
Carbonic acid, 11
Carminite, 26
Carnallite, 7
Carolathine, 15
Carpholite, 19
Carphosiderite, 27
Cassiterite, 9
Catapleiite, 18
Celestine, 22
Cerasine, 29
Cerite, 18
Cerusite, 28
Cervantite, 10
Chabazite, 19
Chalcedony, 11
Chalcodite, 17
Chalcolite, 27
Chalcophyllite, 27
Chalcopyrite, 5
Chalcotrichite, 9
Chalybite, 28
Childrenite, 27
Chiolite, 7
Chiviatite, 5
Chlorastrolite, 19
Chlorite, 17
Chloritoid, 17
Chloropal, 20
Chlorophæite, 16
Chondrodite, 13
Chrismatine, 30
Chrome ochre, 20
Chromic iron, 8
Chrysoberyl, 9
Chrysocolla, 18
Chrysolite, 12

Cinnabar, 4
Clausthalite, 3
Clayite, 6
Clinochlore, 17
Clintonite, 17
Cobaltine, 4
Coccinite, 7
Collyrite, 20
Columbite, 21
Conarite, 25
Conichalcite, 27
Connellite, 23
Copaline, 30
Copiapite, 24
Copper, 1
Copperas, 24
Copper glance, 3
Copper nickel, 4
Coquimbite, 23
Cornwallite, 27
Corundum, 8
Cotunnite, 7
Covelline, 5
Crednerite, 9
Crocidolite, 16
Crocoisite, 22
Cronstedtite, 18
Cryolite, 7
Cryptolite, 25
Cuban, 5
Cuproplumbite,
Cyanochrome, 23
Cyanosite, 23
Cyclopite, 15

Danburite, 14
Datholite, 20
Dechenite, 22
Delanovite, 20
Delessite, 17
Delvauxene, 27
Demidoffite, 18
Descloizite, 22
Deweylite, 17
Diadochite, 27
Diamond, 2
Diallogite, 28
Diaspore, 9
Dimorphine, 2
Dinite, 31
Diopside, 11
Dioptase, 18
Dipyre, 13
Discrasite, 3
Dolomite, 28
Domeykite, 3
Dopplerite, 30
Dreelite, 22
Dufrenite, 27
Dufrenoysite, 6

Edelforsite, 11
Edingtonite, 19
Eisennickelkies, 3
Elaterite, 30
Ellagite, 19
Embolite, 7
Emerald nickel, 29
Enargite, 6
Enstatite, 12
Ephesite, 18
Epidote, 11
Epistilbite, 19
Epsomite, 24
Erdmanite, 20
Erinite, 27
Erubescite, 3
Erythrine, 26
Eucairite, 3
Euchroite, 27
Euclase, 16
Eudialyte, 12
Eukamptite, 17
Eulytine, 12
Euphyllite, 17
Euxenite, 21

Faujasite, 19
Fayalite, 12
Fergusonite, 21
Fichtelite, 30
Fireblende, 6
Fischerite, 26
Fluellite, 7
Fluocerine, 7
Fluocerite, 7
Fluor, 7
Forsterite, 12
Franklinite, 8
Freieslebenite, 6

Gadolinite, 14
Galena, 3
Garnet, 13
Gay-lussite, 29
Gehlenite, 15
Geocronite, 6
Gersdorffite, 4
Geyserite, 11
Gibbsite, 10
Gismondine, 14
Glaserite, 22
Glauberite, 22
Glauber salt, 24
Glaucodot, 4
Gmelinite, 19
Gold, 1
Gold amalgam, 1
Goslarite, 24
Göthite, 9
Graphite, 2
Greenockite, 4
Groppite, 17
Grossular, 13
Grünauite, 3
Guyaquillite, 30
Gypsum, 23

Haidingerite, 26
Halotrichite, 23
Harmotome, 19
Hartine, 30
Hartite, 30
Hatchettine, 30
Hauerite, 4
Hausmannite, 9
Häuyne, 14
Hayesine, 25
Hedenbergite, 11
Helvin, 13
Hematite, 8
Herderite, 26
Hessite, 3
Heteroclin, 9
Heteromorphite, 5
Heulandite, 19
Hircine, 31
Hisingerite, 17
Hopeite, 26
Hornblende, 12
Hörnesite, 26
Hyalite, 11
Hydroapatite, 25
Hydroboracite, 25
Hydrocalcite, 29
Hydromagnesite, 29
Hydrophite, 17
Hydrotalcite, 10
Hypersthene, 12

Idocrase, 13
Idrialine, 30
Ilmenite, 8
Iodo-bromid of silver, 7
Iodyrite, 7
Iolite, 14
Iridosmine, 1
Irite, 8
Iron, 1
Iserine, 8
Isopyre, 15
Ittnerite, 19
Ixolite, 30

Jamesonite, 5
Jarosite, 24
Jasper, 11
Jaulingite, 31
Jet, 2
Johannite, 24

Kaneite, 4
Karelinite, 9
Keilhauite, 16
Kenngottite, 6
Kerargyrite, 7
Kermesite, 10
Kerolite, 16
Kischtimite, 29
Knebelite, 13
Kobellite, 6
Könleinite, 30

Könlite, 30
Köttigite, 26
Krantzite, 31
Kuhnite, 25
Kyanite, 16

Labradorite, 15
Lagonite, 25
Lanarkite, 22
Lanthanite, 29
Lapis lazuli, 14
Larderellite, 25
Laumontite, 18
Lazulite, 25
Lead, 1
Leadhillite, 22
Lecontite, 23
Leonhardite, 18
Lepidolite, 14
Lepidomelane, 14
Lettsomite, 24
Leucite, 15
Leucophane, 12
Leucopyrite, 4
Levyne, 19
Libethenite, 26
Liebigite, 29
Lievrite, 16
Lignite, 2
Limonite, 10
Linarite, 24
Lindackerite, 28
Linnæite, 5
Liroconite, 27
Loewigite, 24
Löweite, 23

Magnesite, 28
Magnetite, 8
Magnoferrite, 8
Malachite, 29
Manganblende, 3
Manganite, 10
Manganocalcite, 28
Mangan vitriol, 24
Marcasite, 4
Margarite, 18
Martite, 8
Mascagnine, 23
Matlockite, 9
Medjidite, 24
Meerschaum, 16
Meionite, 13
Melaconite, 8
Melanchyme, 31
Melanhydrite, 17
Melanite, 13
Melanochroite, 22
Melinophane, 12
Mellilite, 13
Mellite, 31
Mendipite, 9
Meneghinite, 6
Mengite, 21
Miargyrite, 5
Middletonite, 30
Millerite, 4
Mimetene, 25
Mineral coal, 2
Minium, 9
Misenite, 23
Mispickel, 4
Molybdenite, 5
Molybdine, 11
Monazite, 25
Monradite, 16
Montmorillonite, 20
Morenosite, 24
Mosandrite, 20
Muriatic acid, 7
Muscovite, 14

Nagyagite, 4
Natrolite, 19
Natron, 29
Naumannite, 3
Neolite, 16
Nepheline, 15
Newkirkite, 10
Nickel gymnite, 17
Nitrammite, 28
Nitratine, 28
Nitre, 20
Nitrocalcite, 28
Nosean, 14

Okenite, 18
Oligoclase, 15
Olivenite, 27
Onofrite, 4
Opal, 11
Orpiment, 2
Orthoclase, 15
Ottrelite, 17
Ouvarovite, 13
Oxalite, 29
Ozocerite, 30

Palladinite, 9
Palladium, 1
Paracolumbite, 21
Parathorite, 21
Parisite, 29
Partschin, 14
Pateraite, 22
Pectolite, 18
Pelicanite, 11
Pennine, 17
Percylite, 9
Peridot, 12
Periclase, 8
Perofskite, 21
Petalite, 15
Pharmacolite, 26
Pharmacosiderite, 27
Phenacite, 13
Phillipsite, 19
Phlogopite, 14
Pholerite, 10
Phosphochalcite, 27
Piauzite, 30
Pickeringite, 15
Picromerid, 23
Picrophyll, 16
Picrosmine, 16
Piedmontite, 14
Pimelite, 20
Pissophane, 24
Pistacite, 14
Pitchblende, 8
Pitticite *Haus*, 27
Plagionite, 5
Platiniridium, 1
Platinum, 1
Plattnerite, 8
Plumbic ochre, 8
Plumbo resinite, 27
Polianite, 9
Pollux, 15
Polybasite, 6
Polychroilite, 15
Polycrase, 21
Polyhalite, 23
Polymignyte, 21
Portite, 18
Potash alum, 23
Precious opal, 11
Prehnite, 19
Prehnitoid, 12
Proustite, 6
Pseudophite, 17
Psilomelane, 10
Pyrargyrite, 6
Pyrites, 4
Pyrochlore, 21
Pyrolusite, 9
Pyromeline, 24
Pyromorphite, 25
Pyrope, 13
Pyrophyllite, 18
Pyropissite, 30
Pyrosclerite, 17
Pyrosmalite, 18
Pyroxene, 11
Pyrrhite, 21
Pyrrhotine, 4

Quartz, 11
Quicksilver, 1

Rammelsbergite, 4
Realgar, 2
Red copper, 8
Remingtonite, 29
Retinite, 30
Retzbanyite, 10
Reussin, 23
Rhodizite, 15
Rhodonite, 12
Riolite, 5
Ripidolite, *G. Rose*, 17
Rœmerite, 23

Roesslerite, 26
Romeine, 26
Rutherfordite, 21
Rutile, 9

Sal ammoniac, 7
Salt, 7
Samarskite, 21
Saponite, 16
Sapphirine, 16
Sarcolite, 13
Sassolin, 11
Savite, 19
Scapolite, 13
Scheeletine, 21
Scheelite, 21
Scheererite, 30
Schneiderite, 19
Schorlomite, 20
Schreibersite, 4
Schrötterite, 20
Scleretinite, 30
Scolecite, 19
Scorodite, 26
Selenate of lead, 23
Selenium, 2
Selensulphur, 2
Semi-opal, 11
Senarmontite, 10
Serpentine, 17
Sideroschisolite, 18
Silicate of yttria, 15
Silimanite, 16
Silver, 1
Silver glance, 3
Skolopsite, 14
Skutterudite, 5
Sloanite, 19
Smaltine, 4
Smithsonite, 28
Sodalite, 14
Solfatarite, 23
Spadaite, 16
Spessartine, 13
Sphene, 16
Spinel, 8
Spodumene, 12
Staurotide, 15
Steinmannite, 3
Stephanite, 6
Stercorite, 26
Sternbergite, 5
Stibnite, 2
Stilbite, 19
Stilpnomelane, 17
Strakonitzite, 12
Stromeyerite, 4
Strontianite, 28
Struvite, 26
Sulphur, 2
Sulphuric acid, 11
Sulphurous acid, 10
Susannite, 22
Syepoorite, 3
Sylvanite, 4
Sylvine, 7
Symplesite, 26

Tachhydrite, 7
Tachyaphaltite, 13
Tagilite, 27
Talc, 16
Tannenite, 5
Tantalite, 21
Tauriscite, 24
Telluric ochre, 10
Tellurium, 1
Tennantite, 6
Tenorite, 8
Tephroite, 13
Tetradymite, 2
Tetrahedrite, 6
Thenardite, 22
Thermonatrite, 29
Thermophyllite, 17
Thierschite, 29
Thomsonite, 19
Thorite, 18
Thrombolite, 26
Thuringite, 17
Tin, 1
Tin pyrites, 5
Topaz, 15
Tourmaline, 16
Tremolite, 12
Trichalcite, 26
Tryphyline, 26
Triplite, 26
Tritomite, 18
Trona, 28
Tscheffkinite, 20
Tschermigite, 23
Tungstate of copper, 21
Turnerite, 20
Turquois, 25
Tyrite, 21
Tyrolite, 27

Ullmannite, 4
Uranite, 27
Uranochalcite, 24
Uranochre, 24

Valentinite, 10
Vanadinite, 22
Vauquelinite, 22
Vivianite, 26
Voglite, 29
Volborthite, 22
Volgerite, 10
Völknerite, 10
Voltaite, 24
Voltzite, 9

Wad, 10
Wagnerite, 25
Walchowite, 30
Warwickite, 25
Water, 8
Wavellite, 27
Websterite, 24
Weissigite, 15
Whewellite, 29
Whitneyite, 3
Wichtyne, 12
Willemite, 13
Witherite, 28
Wittichite, 6
Wölchite, 6
Wolchonskoite, 20
Wolfram, 21
Wolframine, 11
Wolfsbergite, 5
Wölherite, 20
Wollastonite, 11
Wulfenite, 21
Wurtzite, 4

Xanthocone, 6
Xenotime, 25

Yttrocerite, 7
Yttro-tantalite, 21

Zinc, 1
Zinc bloom, 29
Zincite, 8
Zinkenite, 5
Zippeite, 29
Zircon, 13
Zoisite, 14
Zoisite *Brooke*, 14

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4	5	6

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